

THE MILLING WORLD

AND

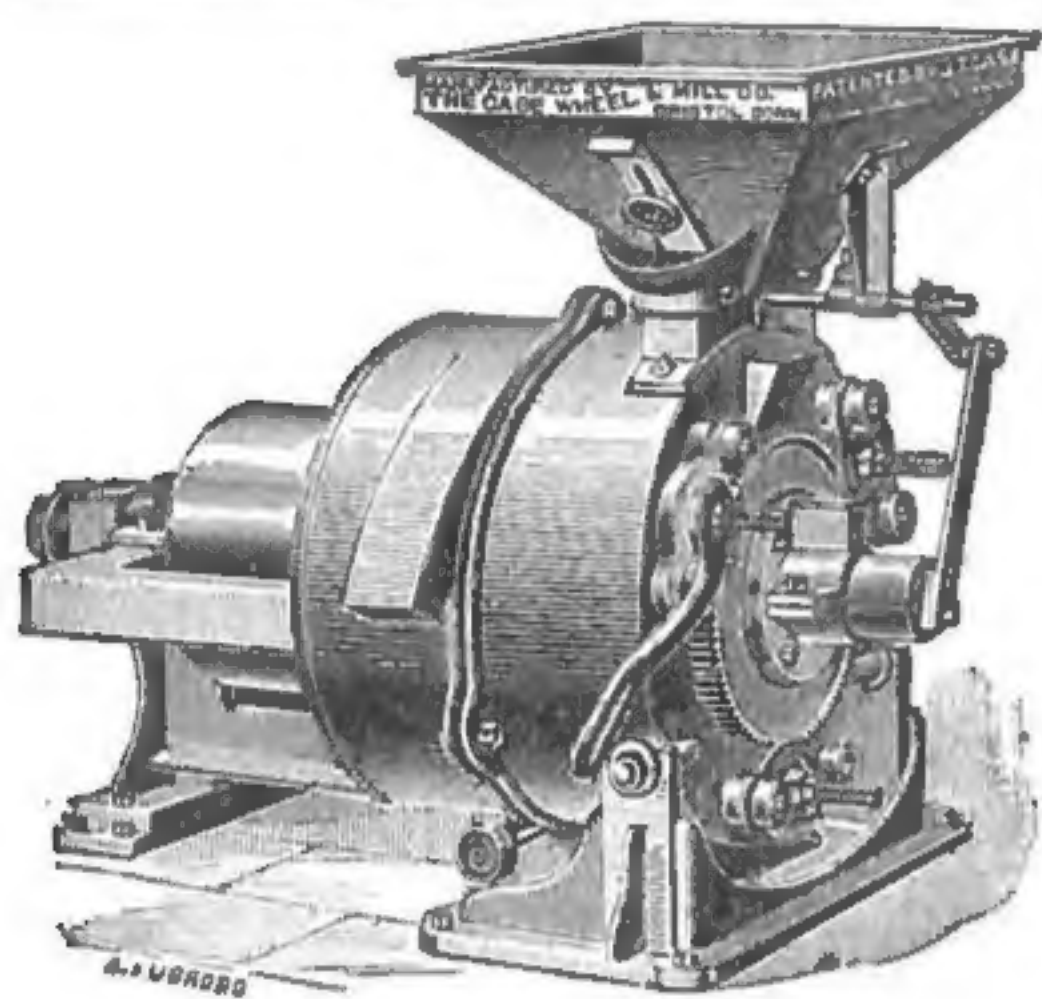
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXI. No. 3.

BUFFALO, N. Y., SEPTEMBER 16, 1889.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

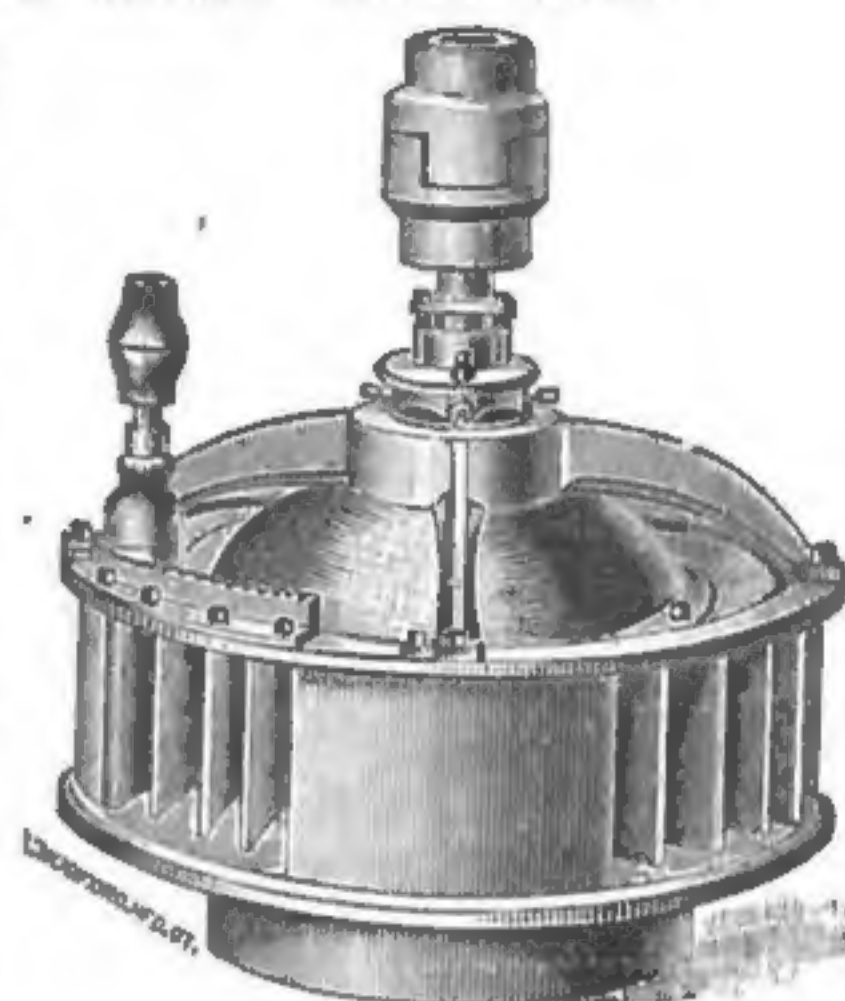
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—O— AND —O—
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FOUR-ROLLER WHEAT MILL

PURIFIER AND ASPIRATOR

ROLLS REGROUND AND RECORRUGATED.

**SHAFTING,
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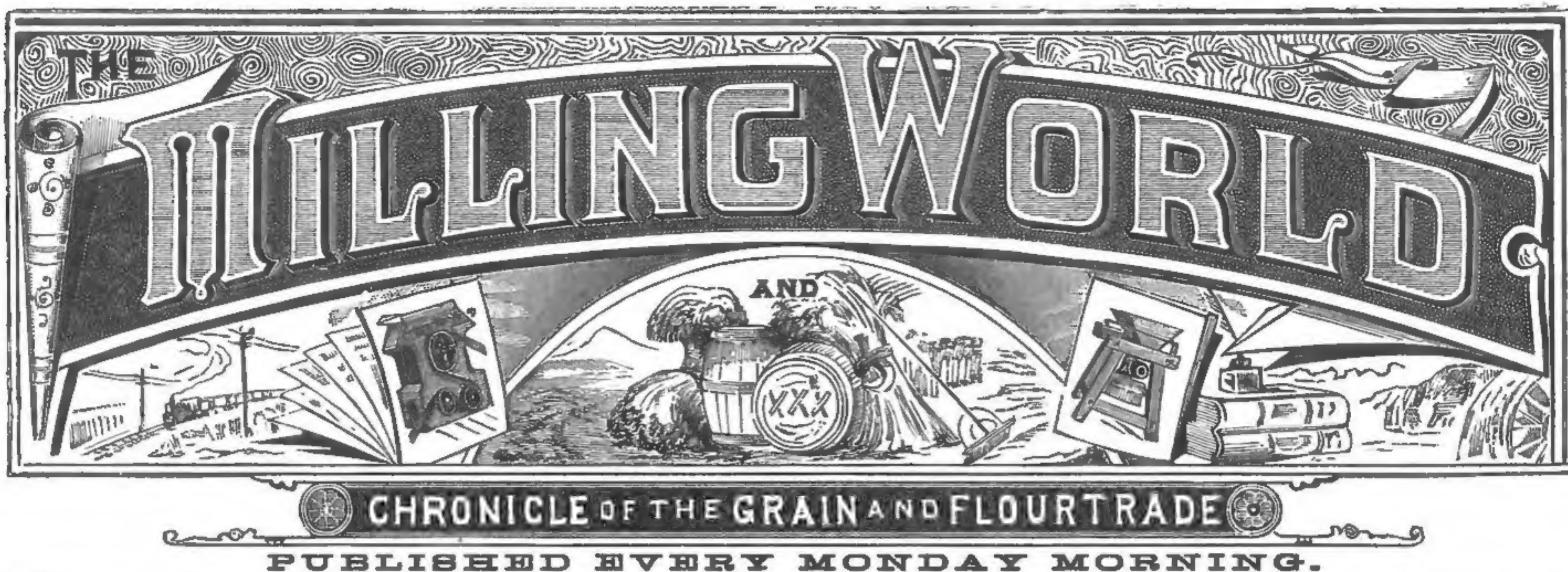
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CASE.

CASE MFG. CO., COLUMBUS, O.
GENTLEMEN: If we were to build a hundred mills we
would not permit any other than the "CASE" roll to
enter them. They are the best roll on earth.
Yours truly,
W. C. MANSFIELD & CO.

W. C. MANSFIELD & CO.,
MERCHANT MILLERS,
CLEVELAND, TENN., AUG. 29, 1889.

CASE.



VOL. XXI. No. 3.

BUFFALO, N. Y., SEPTEMBER 16, 1889.

\$1.50 PER YEAR.

REPORTS from Minnesota aver that the frosted wheat sowed in that State has astonished the farmers and every one else by turning out a large yield of extra-fine wheat. We would like to believe the assertion. We do not say that it is not true, but it seems unreasonable and unnatural that defective seed should yield superior product, and we are free to say that we do not believe it.

THE mephitic Minneapolis morologic self-styled editorial crank is emitting a new series, "copyrighted," of putrid flavors on hackneyed subjects. Same old crank. Same old flavors. Same old "copyrighted." Same old egotistic blather and chestnuts. Same old gas-bag. Same old officious fool rushing in to damage some one by defending him against some one else. Same old failure. Same old self-praise. Same old want of success in inducing the world to think as magnificently of him as he thinks of himself.

MILLERS in this country will probably be surprised to learn that the number of flouring-mills in Great Britain has been reduced from 10,450 in 1879 to 8,800 in 1887, and that there are only 540 roller mills in that number. Of course the reduction in number has not been coupled with a reduction in capacity. The modern mills of great capacity have supplanted the old-fashioned concerns of small capacity, and the total capacity of the mills of Great Britain is larger now than at any former time. The same phenomenon of fewer mills and greater aggregate capacity is to be seen in the United States.

CANADA wishes Great Britain to kick up a muss over the Behring Sea matter. This is very unkind and inconsiderate of Canada. Great Britain wants millions of bushels of wheat from the United States during the coming winter, and, if she should obey the Canadian Jingos and send over her iron-clads and sweep our sea-board cities out of existence, it might make the Yankees feel slightly wexed, and they would probably raise the price of wheat so that it would make bread very dear in England. We appreciate the galling situation, viewed from the standpoint of Canadian pride and bounce, but we also appreciate the situation viewed from the standpoint of the British stomach and its needs. Evidently the Canadian pride and bounce, put into the scale with the British stomach and its needs, must kick the beam. If Canada finds the Behring goings-on beyond bearing, she has only to separate from Great Britain, declare herself a nation with a big "N," and begin the national business by "licking" the vital spark out of the United States. That would give her an immense start nationally. No charge is made for this suggestion.

ENGLISH millers, looking at the abundant and excellent crop of wheat in the United States and at the deficient and defective crop in Europe and India, are beginning to think and to say that the American flour-makers are very likely to regain this year all that they lost last year in trade with Great Britain in flour and grain. They are renewing their cry that the one great need of the British millers is a supply of fine wheat direct from the American wheat-fields, show-

ing that, however much they may vaunt their Indian and Russian and other wheat supplies, they instinctively turn to the United States for a reliable supply of excellent wheat. Of course this will surprise the Minneapolis morologists, who have frantically proclaimed that the British would prefer "mud" to American wheat and flour, but those morologists are liable to surprise every time they meet an incontrovertible fact. They are so accustomed to self-poisoning and self-inflation by their own wild imaginings that sober facts and plain truths make them experience that "extremely tired feeling" which a defunct patent-medicine concern used to promise to cure for "a dollar a bottle." The British millers freely acknowledge that the situation of last year is reversed.

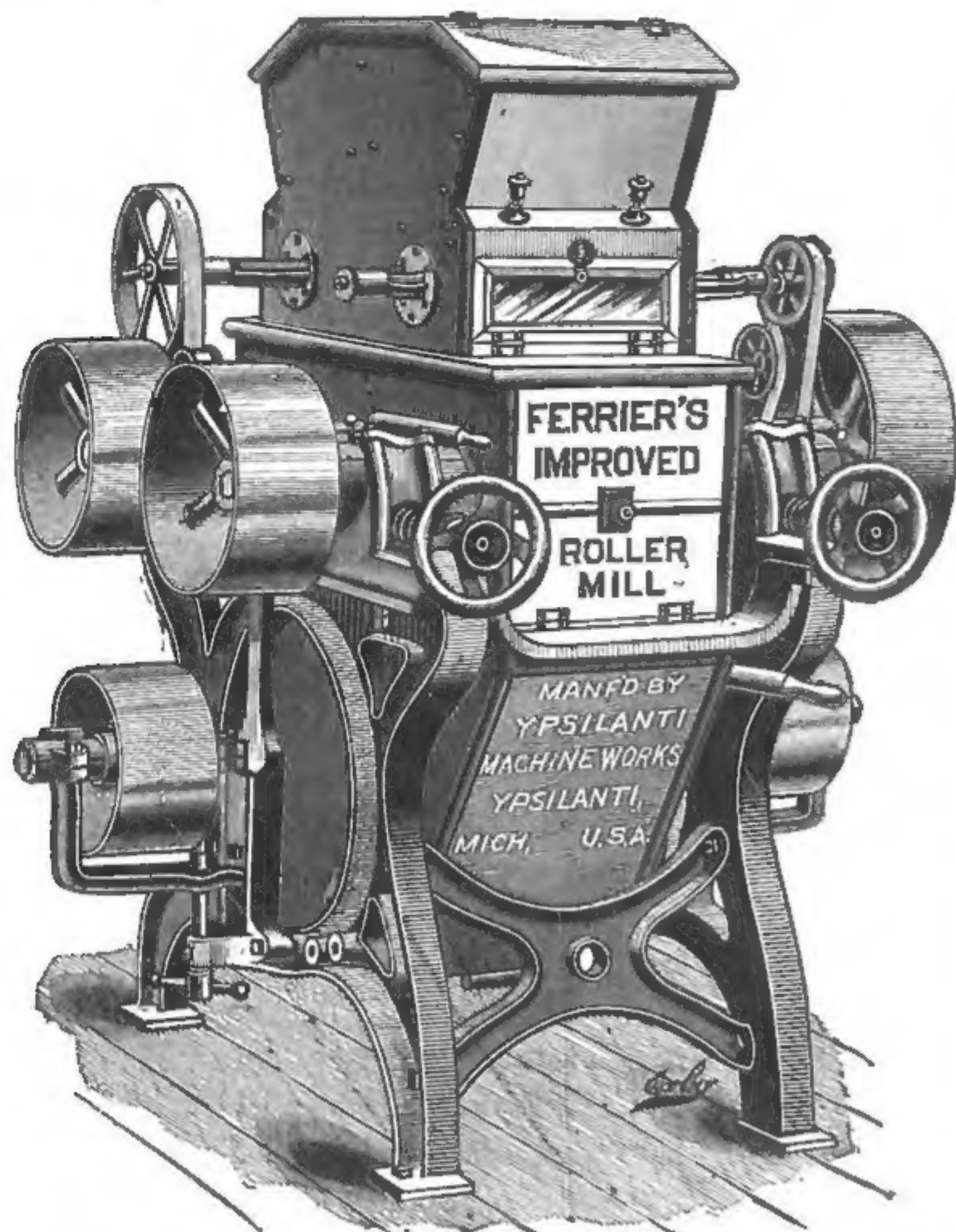
ECONOMIC subjects are confusedly and confusingly treated when handled by writers who have not thought them out clearly, or by writers who have a hobby or a theory to prove, and who are determined to bend every thing to the proof. The subject of protective tariffs is probably the most badly treated subject of the present time. The free-traders talk of a "protective tariff" as a "warfare," a "discrimination," and other things which it is not, in any sense of the word. Here is our esteemed St. Louis cotemporary, "The Merchant, Miller and Manufacturer," for instance, throwing a lurid side-light on itself rather than on the subject of protection, in the following editorial utterance: "A high rate of duty on flour goes into effect in Brazil in a few days, and the new law of Portugal as regards importation of wheat is rigid and exclusive, while the Canadians want a heavy duty imposed on flour coming into the Dominion. This looks as if American flour is to get it on all sides. If Uncle Sam would reciprocate with those countries in the exchange of commodities perhaps they would not make war on our flour and wheat." It is a solid fact that it is the sheerest nonsense to talk of "war on our flour and wheat" in the cases alluded to. As a matter of fact, every one of the countries named has been imposing duties on imported wheat and flour for years. To admit Canadian, Brazilian or Portuguese commodities into the United States would not have the slightest effect on the tariff laws of those countries, while it would prostrate many American industries. The Canadian millers are justly demanding an increased duty on imported flour, as the present duty squeezes them severely, and to talk of simple self-defense as though it were aggressive "war" is simply to show at the outset that the writers who talk in that strain are out of their depth. The millers of the United States would be hurt, not helped, by free importations of iron and steel wares, of silks, cottons, woollens, carpets and other textiles, because the free importations would mean stoppages of great industries here and the throwing of thousands of men out of work. The result would be less purchasing power on the part of American flour consumers, lower prices for flour and farm produce in general, and ever-increasing prices for imported wares, just as it used to be in the past when the United States manufactured little and imported much. There are, possibly, many things which American millers want, need, and should have, but free trade is not on the list.

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MILL BUILDERS

And Manufacturers of

FLOUR MILL MACHINERY



Sizes of Ferrier's Improved Four-Roller Mills.

8x12	6x15	6x20
9x15	9x18	9x24

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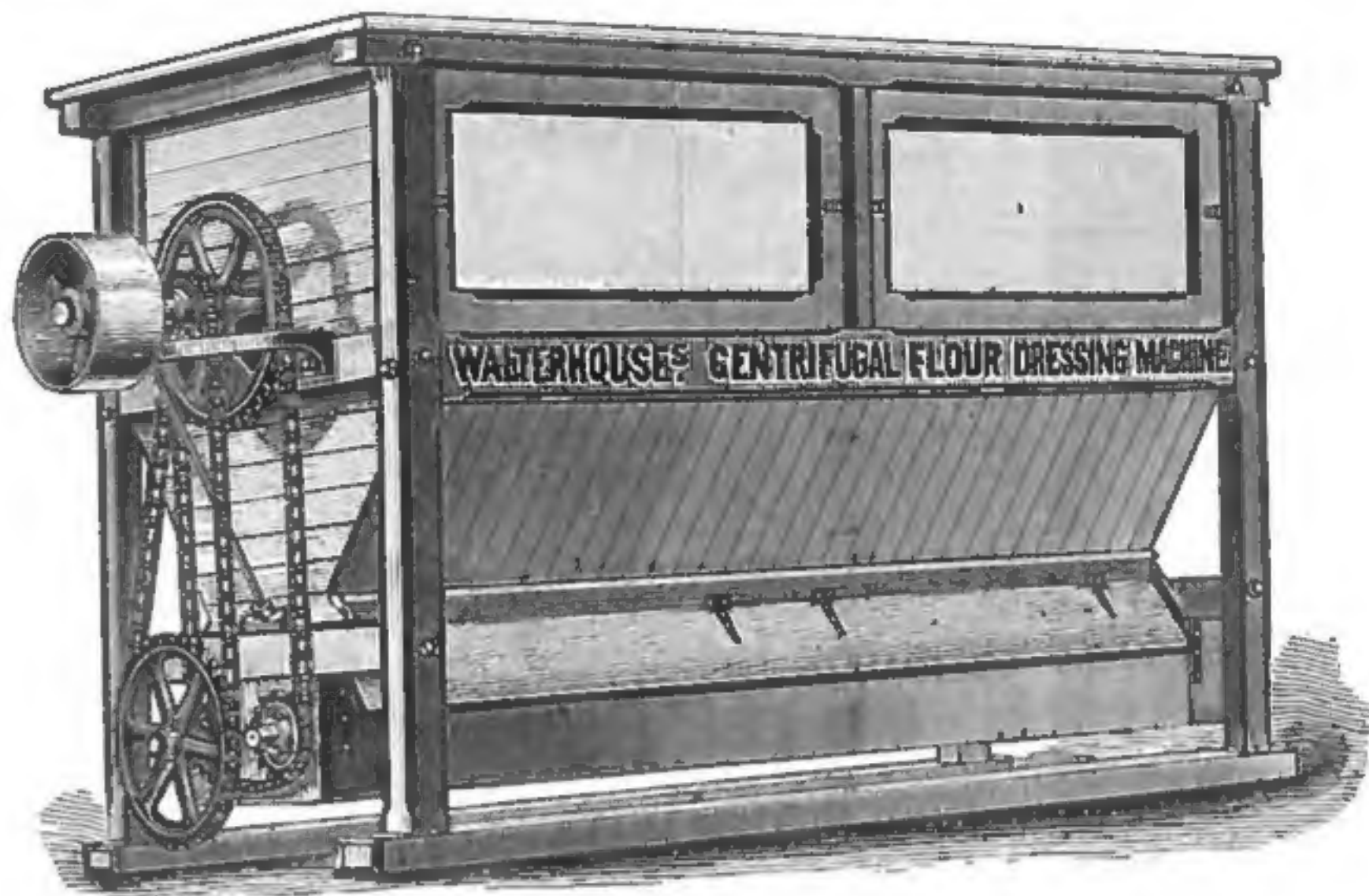
Gentlemen: We have had a line of your "Roller Mills" in use for over two years, and they have given entire satisfaction in every respect. They work like a charm, and their ease of adjustment and solid structure, together with the excellent finish you give them, can but recommend your machines to the milling public.

Yours respectfully,

A. R. DICKINSON & CO.

NASHVILLE, TENN., MAY 8, 1889.

Dealers in Bolting Cloth. Walterhouse's Centrifugal; Walterhouse's Slow-Running Flour Dresser with Inside Cylinder; Plain Round Reels; Scalpers, Bolting Screens, Etc., Etc., Etc.



JOHN ORFF, PROPRIETOR OF
EMPIRE FLOURING MILLS.
FORT WAYNE, IND., APRIL 10, 1889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

Gentlemen: The Centrifugal Reel bought from you some time ago is doing its work complete in every respect. It does a large amount of work, and does it well. Should we make further changes in bolting, shall use more of them. Wishing you success, we remain,

Respectfully,

JOHN ORFF.

TO YPSILANTI MACHINE WORKS.

OFFICE OF LEXINGTON MILL CO.,
LEXINGTON, MICH., JAN. 22, 1889.

Gentlemen: In reply to yours of June 5th, would say that we are well pleased with our mill. It has more than met our expectations. Although it was feared that the six-inch rolls would not prove a success, we find them to be complete in every respect. We are making as fine a flour as there is made in the state, and we guarantee our patent to be equal to Minnesota Patent. The mill has given us no trouble whatever since we started it, and for plan and workmanship, your Mr. G. Walterhouse deserves great credit. If your friends doubt it would be pleased to have them come and see for themselves.

Yours respectfully,

LEXINGTON MILL CO.

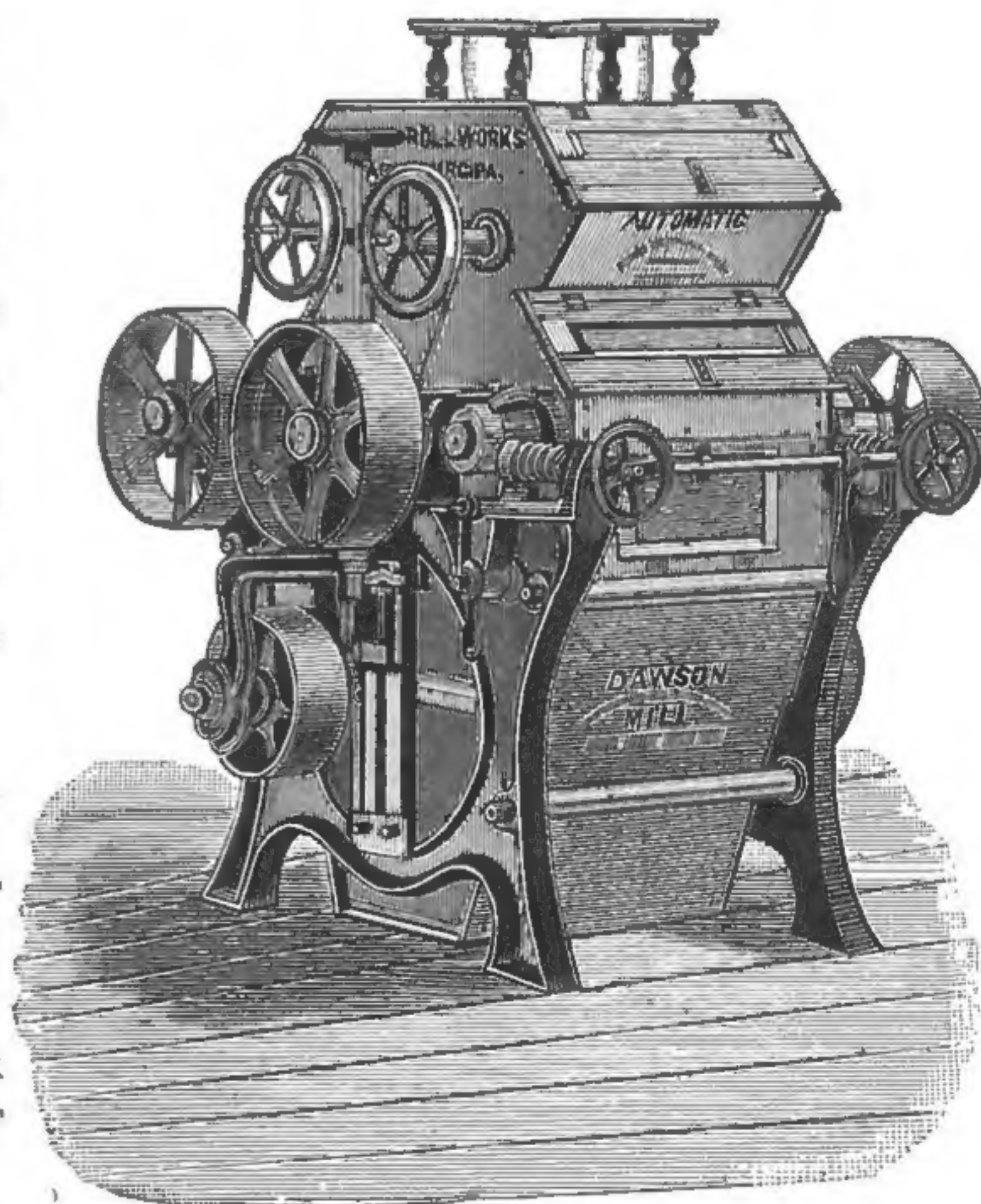
Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

We have a large plant to Re-grind and Re-Corrugate Rolls.

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



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Dawson Roll Works, Harrisburg, Pa.



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Over Bank of Attica.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS McFAUL. JAMES NOLAN.

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To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

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Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

WANTED.

A situation with parties who appreciate good work, with rolls or buhrs on patents. Have the following recommendation from Miller Bros., Forest Grove, Ore., dated Nov. 10, 1887: "To whom it may concern: This is to certify that Peter Provost has been in our employ as head miller, and has given entire satisfaction. We believe him to be a very competent man, and cheerfully recommend him to the milling public." State wages you wish to pay. Address, PETER PROVOST, Menominee, Mich. 21

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WANTED.

A miller with some capital to help stock with, to take charge and run my mill. Address LOCK BOX 265, Clearfield, Clearfield county, Pa. 1720

FOR SALE.

Flour-mill, corn-mill and cotton-gin, in a new growing country, splendid for wheat. Good opening for a mill-man who understands the business. For particulars apply to W. J. MILLER & CO., Ballinger, Texas. 2023

FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,
Dubuque, Iowa.

8tf

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
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Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
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For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to

SAMUEL CAREY,
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WANTED.

A good buhr miller, that thoroughly understands his business, to run a custom mill. Must be a sober, industrious man. State age, how long at the business, whether married or not, and best terms for steady employment. Give references. Address BEACH, BROWN & CO., Montrose, Pa. 2228

ALL recent reports, from grain-growers, from elevator men, from agents, from millers and from brokers, agree in confirming the statement that the grain of the present crop is exceptionally fine. The winter wheat is large, plump, finely colored and easily milled, and the spring wheat is running No. 1 on an unusually large proportion. Let the campaign go on.

EUROPEAN journals are pretending to look for an exportable surplus of 10,000,000 to 12,000,000 bushels of wheat from Canada on this crop. Where is the grain? Calling the population of Canada 4,800,000, the consumption would be from 18,000,000 to 22,000,000 bushels for the year. The total crop of Manitoba and Assiniboia is rated at 6,000,000 to 8,000,000 bushels. Has the rest of Canada a crop large enough to make out the 14,000,000 bushels required for home consumption and furnish 12,000,000 bushels for exportation? The attempt to expand a 15,000,000-bushel crop over a 26,000,000-bushel demand will not succeed.

We are interested in seeing and reading the paper on scientific milling read by our old friend, J. Murray Case, at the Paris convention of the British and Irish Millers, but we confess that it makes it look queer to hear Mr. Case talking of "£" instead of "\$," and to see his "color" changed to "colour," his "insure" to "ensure," and other orthographic changes necessitated in the passage of his essay through the labyrinths of an English printing office. He can not prevent the English journals from misspelling nor the French journals from mistranslating his words and sentences, but we hesitate to believe that he has descended to the wearing of English plaid trowserloons and monocles, or that he eats French fried frogs' legs with any other than the purest Columbus accent. How is it, J. Murray? Voila! Comment vous portez vous?

AMERICAN wheat yields this season show some surprising figures. We have reports of 40-bushel, 50-bushel and 60-bushel yields from considerable tracts, and yields from 20 to 30 bushels to the acre are countless. Some of the finest lands in Oregon and Washington have turned out 72 bushels to the acre. Now it seems an injustice for the government statisticians to figure out an "average" that will completely hide the magnificent yields of wheat in the best sections. The report of total and average yields should be so made that these fine outputs of hundreds of thousands of acres should not be hidden. The area not cut at all should be shown. The area yielding from 9 to 12 bushels should be shown. The areas yielding from 12 to 18, from 18 to 24, and from 24 bushels upward should be shown. Such a showing would be only fair. The present method misrepresenting the whole wheat section, by giving the uncut areas an "average" yield subtracted from the abundant harvested areas, should be abandoned.

SECRETARY BARRY, of the National Association, by his silence concerning the charges made by our Chicago cotemporary, "The American Miller," seems to admit that he was the picayunish author of the attack on three milling journals mentioned. Some of his warm personal friends urge that the journals wantonly assailed by him ought to overlook the attack and hold up his hands as secretary, disregarding his character as a man. We repeat that such generosity on the part of those he assailed, while very comfortable for Mr. Barry, would be the grossest self-stultification on the part of those journals. In Secretary Seaman's case it was the character of the man overruling his official functions that made his incumbency in the office disastrous to the association, and Mr. Barry is quite as human as Mr. Seaman, and his actions are quite likely to be colored by his peculiar mental qualities, so that our cotemporaries, who would like to exercise the generosity of his victims towards him, are preparing to disappoint themselves.

BRITISH AND IRISH MILLERS IN COUNCIL.

According to programme the National Association of British and Irish Millers held their eleventh annual convention in Paris, France, commencing August 20. The foreign millers were warmly welcomed to the international congress by President Dubray of the French association. Secretary Chatterton of the British and Irish Association presented a lengthy report of the Council of the Association. One clause of this report will interest the millers of the United States. It is as follows:

"During the past year the important movement, or it may be more fitly termed revolution, which has been for some years in progress in the milling business, has been further developed. The altering conditions of the trade were pretty fully reported on to the Convention in 1887, when it appeared there were to that date 460 complete roller-process mills in the United Kingdom. This number has now (1889) been increased to about 540, and not only has there been a great change in the system of manufacture, but the milling trade of the country has quickly gravitated to the towns situated near the sea coast or on the banks of navigable rivers, where foreign grain, which is now the main source of food supply, can be obtained without the expense of transshipment or conveyance by railways. This has resulted in the unfortunate closing of large numbers of inland corn-mills, or where not actually stopped, their work being confined to farmers' gristing trade or cattle food preparation. The total number of the mills in the Kingdom is now about 8,500, against 8,800 in 1887, and 10,450 in 1879. The Association had occasion to complain energetically in its report two years ago of the unfair competition the millers of this country were subjected to by the practice prevalent in America, where in some districts the millers had great influence on the railway boards, of sending forward large quantities of flour for export at low through rates. These rates were far cheaper than those in force for transit of grain in the interior of America. The result was seen in the curious fact that for a long period the price of bread was cheaper in London and Liverpool than it was in Chicago or New York. This practice, with many others, caused considerable attention to be given to the matter in America, which resulted in the enactment of the Inter-State Commerce Law, which, if carried out in its integrity, will put a stop to preferential carriage of flour at rates from Chicago to Liverpool lower than those in force at the same time from Chicago to New York. There is no doubt that the position of the English millers has distinctly benefited by this act, for the previous action of the railways had all the effect of a cash bounty on exports from America, and unless some such measure had been enacted there would have probably been a demand from the English trade for countervailing duties to prevent the destruction of our industry. This has now been happily averted, and the English miller, who only demands fair play and no favor, can meet and cope with all reasonable competition. There is reason to believe, so great has been the progress and the energy of the trade, that the best mills in the United Kingdom are now superior in all points to any either in Hungary or America."

The report showed that the Indian Government inquiries concerning the use of Indian wheat in British mills had elicited many answers, and that 249 millers replied that they used Indian wheats in quantity, 259 used it in limited quantity, 348 were partly prevented from using it because of its impurities, 41 had the necessary cleaning machinery to deal with the dirt and were not prevented from using it, 461 stated that they would use a much larger quantity of it if they could obtain it in a clean state, 27 stated that if clean they could not use a larger quantity, 229 stated that the admixture of red wheat with white was of serious importance to them, as the red wheat could only be reduced by roller-mills, 256, most of whom had roller mills, were indifferent as to the admixture, 322 stated that they preferred the early shipments and paid higher prices for them, 16 stated that they were indifferent, it being merely a question of relative values, 429 expressed their warm approval of a form of contract limiting the admixture to 2 per cent. and 4 were against any alteration.

President Daw, in moving the adoption of the report, referred to the progress of roller milling, which enabled them so much better to meet foreign competition; in fact they were now in a fair way to make both ends meet. There was a trace of sadness in the report's reference to the closing of the country mills, which had so often inspired the poet and the painter. It was a fact, however, that under the altered conditions of milling, the best placed mills, and the only mills likely to succeed best, were those on the sea-board or in large centers. Russia had had abundant crops for the past two years, which was a great boon to them. America, with its poor crop, had sent us the manufactured article in a larger proportion than usual, a fact which was of great

importance to millers. It was, of course, possible that America would increase her competition this season, but he hoped that millers would be able to resist this and still maintain a satisfactory balance. He then referred to the necessity of English millers obtaining the fine hard wheat of the North-West direct, which he hoped would be finally successfully done. Milling "in transit" in America was, he said, no longer possible under the new Inter-State laws, which was very satisfactory for our millers, who had previously labored under an injustice in this respect. On the subject of railway rates he stated that the Government had arranged for a meeting with the railway companies on October 16 to consider the important question of station and service terminals, which had been so freely discussed at their meeting in London some months ago. He next touched upon the question of Indian wheats and their impurities which, he said, very closely affected millers. He felt quite sure that the report of the London Corn Trade Association should not be passed over in silence by millers. It was an insult to millers to say they would not pay more for clean than for dirty wheat. If buyers of Indian wheat could be sure that they were buying clean wheat on sample they would pay more for it. He was sure buying "on sample" was best. The natives were not now paid to send clean wheat, but if the price were higher they were quite keen enough to take advantage of it. He thought it would be a disgrace if British and Irish millers did not insist on clean wheat from the seller, instead of the present dirty stuff. They had been told that 3,000,000 hundredweights of dirt were imported with Indian wheat; but the matter did not end there, for the dirt contained the germs of vegetable and insect life, which may be very injurious in English granaries and stores. Turning to the alteration in their rules, he said they had received 32 new members thereby. It was certainly not enough that the association should have only 310 members out of a total number in the Kingdom of 8,500. The French Association was only three years old and had obtained 300 members in the first year. Their present number is 2,472.

Indian wheat was the subject of much discussion. Mr. Stringer, of Manchester, said that it seemed impossible, even with the best machinery, to clean the Indian wheats. When perfectly cleaned, they make white and good flour, but he had never seen a perfectly clean sample. E. Cooper, of Larne, said that the Indian wheat was the worst millers could have, that he never used it and that he received 10 shillings a ton more for his flour than the roller-millers in his district who used the Indian grain. R. H. Appleton insisted that Indian wheat has not had fair play, that the Indian wheat trade would develop with railway building, and that in time India would be able to produce all the wheat Great Britain required. The report was adopted as read.

Election of officers resulted in the choice of R. H. Appleton, of Stockton-on-Tees as president, H. Robinson, of Deptford, as treasurer, and H. R. Parry, of Isleworth, as auditor. New members of the council of the association were elected to serve in the places of others who had not served after being elected. A number of valuable papers were read. One was by F. A. Ashby, of Croydon, entitled "Color of Wheat and Flour from a Manufacturer's and Merchant's Standpoint." Following is an abstract of Mr. Ashby's paper:

"We are liable to forget that in milling we are dealing with a living organism, that we are not, as quartz-crushers, engaged in grinding inorganic rock, which simply has to be reduced and granulated; for though the wheat berry lies passive in our hands, to be scrubbed and blown and set hopping over our sieves, and though we design finally to dissect him skin from skin and cell from cell, we must do this tenderly and with the least possible friction, for he is worthy of our respect. Were the iron upon the globe to be reduced to a single ounce, the supply of that metal would be irrecoverably lost, but a single grain of wheat saved, and in a very few years the world's population would be again fed with bread. I emphasize this, because I wish to impress the point that we must give the wheat berry time to die. Disregard to this fact, I submit, is a defect in our modern automatic roller-milling. The wheat berry consisting of a kernel with several protecting skins, germ and embryonic membrane in a state of dormant life, we need, after cutting these asunder from each other, to allow the fine skins or membranes to wither; but the germ should be removed as soon as possible, for in it resides the principle of life, quite independent of the rest of the grain. As a consequence the

germ will grow even after being dissected from the grain, if only some equivalent nourishment be provided for it; and it is often to be observed that in the spring of the year flour newly ground will, when kept in a warm place, work through the sack, showing an amount of restless vitality which the process of disintegration has not wholly destroyed. To illustrate the thought as to the need of time to wither the fine membranes and skins, we gather a hazel-nut from a bough, and while green pull off the outside husk. You will find it adheres tenaciously to the shell, but, if kept awhile and harvested, these separate, the skin withering and the nut hardening. This, I believe, is the process going on when a sack of meal is kept for a few weeks before dressing, which system was so highly approved by our forefathers; and in modern milling, if the unpurified middlings are kept for a time, the light inner skin still adhering or being in mixture with the small kernel or semolina requires time to dry and wither, after which a much more perfect purification can be effected, and the hardened kernel more quickly reduced to flour; and the flour is more granular, and is more in the condition suited to the growth of the yeast plant in fermentation. This pause in the manufacture also enables the miller to make his selection for the highest grades. But knowing the impossibility of large mills in England to allow this pause and the manual grading of selection, on account of its great cost, the balance of advantage is doubtless on the side of automatic milling, though in our mills at Croydon the finest flour, and that upon which we can place the most dependence, is still made on a small non-automatic plant. Would it not be possible to provide an artificial harvesting of the middlings at this point of the reductions by heating the air supplied to purifiers, or drying the material over heated rollers? No doubt constant and unremitting acts of purification have largely this drying harvesting effect and are not the least of the advantages gained by those millers who follow up the process of purifying with the greatest continuity to the very end; machines for this fine work are of very modern production and can not be too eagerly sought after.

"The effect of over-heating in manufacture is one of the most mischievous forms of discoloration, as it not only lowers the color, but if the heat is over 112 degrees Fah. the gluten is much injured and loses its power of elasticity. Over-heating also indicates many other evils sure to be in attendance, such as cutting up the skins. The rule to bear in mind is, make as little flour as possible while the outer skins are present in large proportions, right through the reductions and granulation, grind with light pressure till the woody fiber is scalped, sifted, dressed or purified from the chop. We are familiar with the words in our flour contracts, 'Due allowance being made for bleaching,' and how almost impossible it is to keep in condition a standard sample of flour unchanged for any length of time, and doubtless the presence of germ and branny particles greatly increases the danger of early deterioration. Upon this subject there is room for much difference of opinion. The deterioration may, perhaps, be called simply decay, but it is not always this, for in pure flours there is much less change than in flours with large admixture of germ and bran. 1. Then I submit the change arising from the particles of branny matter, softening with the moisture in the flour and atmosphere, and a consequent fermentation set up, the oxygen then combines with the carbon of the vegetable matter in ferment, and the coloring matter being decomposed first goes off with some of the oily property in carbonic acid gas. 2. In the process of grinding the oily matter residing in the germ, which is largely the coloring property so far as yellow is concerned in it, comes in contact with the alkaline salts which exist in very small quantities in the wheat berry, according to Dr. Kick's analysis, the oily matter is dissolved (soap formed) and the heat of the atmosphere causes exhalation. It may be a debatable point whether the alkalis are free to unite with the oily matter until they are reduced to the ash state, which has been done in the analysis mentioned, but having regard to the fermentation in the first place, I should submit that both processes are concerned in the result. We know that light, temperature and moisture are the agents effecting the changes. Yet no rule or regulation or system is adhered to in keeping flour samples awaiting delivery of bulk, and therefore arbitrators have great difficulty in estimating the degree of bleaching which may have taken place in the bought sample. Such samples are often packed away in the blue paper so usually employed in the trade, which paper is not suitable for this purpose, and is, I believe, one of the factors in bleaching the flour so packed. I had a quantity of this analyzed by Mr. Lester Reed, F.I.C., F.C.S., of Croydon. He says: 'I have been doing some experiments with the blue paper, which lead me to the conclusion that some organic coloring matter has been used, very probably indigo, which the blue of the paper closely resembles in its properties. I find a trace of sulphur in some form. I am told that such blue paper can not suitably be used by jewelers for packing silver articles on account of its tarnishing them, although they attribute the effect to arsenic. Now the presence of sulphur might perhaps account, although whether it would do so or not would depend upon the form in which it is present, both for the tarnishing and for the bleaching. It is quite unlikely that the bleaching action of the paper is due to chlorine, as that would destroy the blue of the paper and so can hardly be present in it, and sulphur is, I think, the only other likely thing to account for the effect.' Flour for the above purpose should be packed in canvas bags, placed in a room away from strong light, in an even temperature of, say, 60 degrees, in not less than 2-pound samples, and in a place free from damp.

"The color of flour is not only affected by the various tints of the wheat used, but also by the impurities with which we find it admixed. Assuming that even after most methods of cleaning there yet remain some of

these impurities in what we technically call cleaned wheat, I am about to demonstrate the effect of this upon the color in the flour. We commence our process of grinding upon material of the following colors: Red, yellow of the outer skin, according to the varieties of wheat, and the yellow tint of the germ and oily particles, the white, gray and orange of the gluten and starch cells, the blue or milky tints of the inner skins, and the black and blue tints added by such impurities as cockle, barley, rye and dirt; these colors are by grinding more or less mixed and are seen in the flour when marketed. The flour then is a compound of granular particles differing in color, density, form, size and degree of transparency, and consisting of woody matter, gluten and starch, and in color red, yellow, blue and black, with every variety of shade in these colors mixed in various proportions. We examine this compound in a light which may be strong or weak, white light of noonday or tinted with the prismatic rays of early morning or evening, or perhaps in a light which is tinted by objects from which it has reached us by reflection; the eye also being affected by the constant change of the angle of incidence, the retina itself being subject to an extraordinary and interesting number of delusions, by which the judgment is liable often to be misled. But in a sample of flour we have items of all shapes and sizes, and varying in density, a fact which adds immensely to the possible combination of light and shade when the flour is presented to the eye in motion and placed in various lights. The great difference remains to be explained, color. We must go back to our original material. Red or a reddish brown is present when wheat has not been carefully cleaned and brushed, too much of the epispem being left upon it; or when in wheat reduction the last-break roller has gone too close to the 'bone,' and gluten cells have been removed with too much woody matter attached, we then have red. Yellow is present, but it is not so objectionable unless it arises from germ. The gluten cells often have a yellow tint. Blue and black are present when the wheat has been imperfectly cleaned, or when the first-break flour, and with it the fine milky blue skin, is present, which skin should undoubtedly be removed by the rotary scalper. This is the best scalper for the first four breaks.

"Now with these three colors we can account for all the tints found in flour, for in mixing pigment out of these, three colors can be produced in secondary combination, orange, green, purple; and in the tertiary, brown, broken green and gray, and a very small quantity of blue and black will affect the whole mass. It has been said by Bacon that to produce harmony in a landscape all the primary colors must be present; but this is all changed in our work, for to produce harmony in the bakehouse two at least must be absent. I will write these colors down again and proceed to cancel them: Primary, red, yellow, blue or black; secondary, orange, green, purple; tertiary, brown, broken green, gray. It may be asked, who ever saw green or purple flour? These two colors may not be seen in dry flour, nor until the fine dirty powder goes into solution, but green or broken green is often found in the gluten when the starch has been washed out, and a deep brown purple is also occasionally found, while gray is the prevailing tint. It is well known to painters that representation in all colors can be produced with very few pigments, and that red, yellow, blue and indigo, or lamp-black will produce almost any tint required. This again confirms my statement accounting for the great number of shades found in flour.

"Now, if by cleaning and washing wheat and making perfect separation of impurities we cancel blue and black, we thus get removed nearly all the objectionable colors, for with these must follow the compounds, green, purple, brown, broken green and gray. And then if by polishing and brushing the wheat and purifying, the coloring matter is removed of the red color, the orange and foxy tint must follow, and we have left only the pure yellow and white flour, and it is perfectly wonderful to see the result when, in the careful manufacture of the flour, this is properly done, when compared with the neglect of so doing. To demonstrate the neglect, I have here some copper filings, which is the nearest metallic powder I can use to represent the fine red branny particles of the outside coat of the wheat berry, and some powdered sulphur to represent the floury part. Mixed together you get a dirty blue-green, all the beautiful yellow has entirely gone and no sign of red remains, yet, if placed under the microscope, it is seen to be merely a mechanical mixture, both, as it were, spoiled in color and yet not changed. And so it is with the flour; the mischief done by bran-dust is out of all proportion to the weight it brings to the grist. The remarkable effect of colored particles brought into close mixture is shown in shot silk, where the warp and woof are of different colors, in some light looking one color, and the slightest change of position giving a different reflection of tint to the observer; and while upon this subject I may be pardoned the digression to instance the interesting fact known to fishermen, that all fresh-water fish in our mill-ponds and streams can change color by expanding or contracting their spots of red, yellow and black, and after a few trials match the bottom of the river or pond in which they may be at the moment, no doubt assisted by the medium in which they float to blend the color to the eye of an observer, to the end of self-preservation; a pigeon's breast and a peacock's plumage also give results showing the effect of small particles differing in color ever changing in position, and delighting the eye with endless changes. If we need further proof of the mischief arising from mixing low-grade with bright colors, I instance the practice of sending back returns to nearly finished early products in our flow-sheets, commonly practiced in early days of roller milling experience, and how soon results show us the error. And again, many of us have had to deal with the problem in this way; you have in the mill 50 sacks of fine flour, say pa-

tents, 20 sacks of medium, 40 sacks of thirds, and you have an order for 60 sacks of medium flour; you perhaps order 20 sacks of thirds to be mixed with 10 patents, hoping to make a medium flour equal to your stock, but you will be entirely wrong, you will find the 20 bad ears blighted with the east wind swallow up the 10 good ears.

"A surface of flour held in 20 different lights will probably reflect to the eye as many shades or tints, for when we remember that all different objects reflect some, and usually colored light, we see that the tints of our flour under these circumstances depend not only upon its own proper color as seen in pure sunlight, but also upon the presence of its surroundings, not merely from contrast, but the tints due to mediums. Thus we find if the flour we wish to examine is a slight red hue and is in the neighborhood of something green, the red will incline to orange. If near some yellow object the tendency will be more deeply marked; and again, if the same sample is placed in light reflected by a blue or violet curtain or blind, the result will be a deeper red or slight purple. The amount of light also makes much change in the appearance of flour, and also whether we look close up to them, or some distance away, or whether we examine them with eyes half closed or wide open. Flour too of a bright yellow color would contrast differently when compared against a dull gray flour, in different amounts of light, because the bright flour has in itself more luminosity and would look brighter in a dull light than the gray flour, as compared with a former test in a bright light. Much care is necessary when on the walls of your room or market you can note differing colors reflected, or outside the windows, perhaps, a red brick wall or yellow fence.

"Great apparent changes take place by contrast, hence importance of background. If we cut out of a sheet of red paper two square pieces, and then place one of them on the sheet from which it has been taken, and place the other upon a green sheet, the red square upon the red sheet will not look so brilliant as the red square upon the green ground. In the same way we find that a sample of flour slightly reddish when placed upon a white ground appears darker and more intense, and upon a black ground it becomes tinted somewhat orange red, and upon a dark gray ground it loses intensity and looks a purer white. If you place a sample slightly reddish upon a mahogany table or desk, and a sample of the same flour on a child's slate, holding them about two feet apart, you would not believe them to be the same flour, the background will so completely change their appearance. Orange-tinted flour on a white ground looks darker and reddish and on a black ground yellower. Yellow on a white ground appears darker and more greenish, or in some shades brownish, and on a black ground whiter. Thus if you take a sample of flour from the mills and look at it again in your house, place it upon a table or near a curtain, it will look very different; and even a change from a brown suit of clothes to a darker suit will make, perhaps, to many an unaccountable and frequently a perplexing alteration.

"If it is desired to produce a strong effect of contrast, the samples must be placed as near each other as possible, and as you remove them to some distance the difference shades off in proportion to the distance. When 'Red Dog' is placed to a good orange flour, the red flour looks somewhat purplish, and the orange appears more yellowish. When an orange is close to a yellow, the former looks more reddish, and the yellow greenish yellow. It is a rule of contrast in color that all bright colors in association increase each other in brilliancy, that is, they all become more saturated, while all dull colors have an opposite effect, that is, they are made to appear duller and more indistinct; therefore it is evident that contrast may be helpful or harmful. Fine bright samples improve each other's appearance, while impure and dull samples may appear paler and even more dirty. There is yet another point to call attention to: If a number of narrow slips of flour of differing tints are arranged close together and viewed at such a distance that the blending is more or less accomplished by the eye of the beholder, a very frequent practice in many mills, the tints will differ with each other and mix on the retina of the eye and produce new colors. This is often a very troublesome effect.

"It seems to me no paper on color would be complete without allusion to the organ with which we are able to enjoy light and the many shades of color. It is a fact that in every company of 18 persons one will be blind to some one color or more. I have only dealt with flour in a dry state and in a fine powder. I must not omit to call attention to the effect of dirt or coloring matter when water is added, and as the most valuable flour test for color is M. Pekar's, I need not do more than refer those who are uninformed to Prof. Kick's work. But there is one characteristic in this test which has often been noted by me, and my attention has been called to it by other millers, that after wetting a number of samples of flour till the surface is properly saturated, you must make your comparison either at once, or when they are quite dry; and to learn all you can you should compare them in both these conditions; but it will be worse than useless to examine them for purpose of comparison any time while drying, as the changes that go on in each sample are inconstant and somewhat difficult to account for. I believe it may be due to the dirt or other coloring matter going into solution and staining the particles. If the floor of a room is swept ever so clean with a hair broom, yet if it is then washed the water in the pail reveals that much dirt was left; and if a wheat is ever so well cleaned with the dry process, and then washed in a good washing machine, the water reveals the dirt still remaining. And M. Pekar's test shows, perhaps in the very best way, how much of free soluble coloring matter is left in the flour, which will discolor the bread when the flour has been put through the final test in the dough. And though troublesome in judging flour, we can not regret the difficulty we have to

overcome, for color gradations are the most pleasant and the most precious of the beauties in nature, and the orderly succession of tints gently blending into one another the real delight of every landscape. Accurately to test flour samples it is needful to reduce to the smallest limits the varying conditions of our surroundings. To this end a few suggestions may be helpful:

- "1. Choose a certain background or sampling board, and having observed the effect upon each tint, use only the one you have become accustomed to.
2. Place all the samples at equal distances, see that they are of the same area, shape and thickness, and not too thin upon the board, as the transmitted light from the background will affect seriously the test; press them to equal density.
3. Take note of the light, both in amount and of any surrounding object by which it is transmitted, reflected, or saturated, and try to obtain a north light free from colored objects.
4. Place your samples where the same light in amount will fall on each, and if you have doubts use a good mirror to assist your judgment, viewing them by a reflection.
5. With regard to the eye, rest the nerve by shutting the eye till you see only blackness, or rest them upon a black ground; constantly fear the ghost image.
6. It being impossible to decide about the actual tints of a flour when surrounded by a colored field, it is useful to employ a large piece of black card-board with a slit large enough cut in it, and to be held in such a way as to admit to view in the field of vision only the flour you wish to compare.
7. In using M. Pekar's test wait till your test samples are quite dry before you conclude your work. It is a very interesting investigation. Can any test be found which would enable an analysis of color to be made, and percentages of grades recorded? There are few good and useful attempts to solve this question now offered us, but there is yet room for an invention which shall produce a perfect standard or color constant."

Hearty applause greeted the reading of Mr. Ashby's able and interesting paper. Abstracts from other papers read will be given in future numbers of THE MILLING WORLD. One of them is by Mr. J. Murray Case, of Columbus, Ohio, who was at the convention.

COTEMPORARY COMMENT.

The outlook for millers is entirely flattering. There is plenty of wheat in the country, and of a good quality generally, while prices appear reasonable. The bulls and the bears might not figure as extensively this fall or winter as formerly and thereby give the miller a chance.—*St. Louis "Merchant, Miller & Manufacturer."*

Probably no milling device will ever be brought forth that will beat the millstone for making good graham flour; and it is a wise plan for those who remodel to the roller system to retain a pony run or even a large pair of buhrs for that purpose.—*Kansas City "Modern Miller."*

If European countries have to import wheat, it is cheaper for them to import it in the shape of flour, for in that form they do not have to pay freight on any dirt or other matter not used for human food, and we can put it in that form for them just as cheap, if not cheaper, than they can do it themselves. Electricity and steam have greatly facilitated our flour trade as well as our grain trade, but they have not nor are they killing either.—*Chicago "American Miller."*

We have greater hope for the final success of the man who undertakes to bring his flour up to the standard by grinding good stock on a poor mill than we have of the one who would attempt to put his mill in such perfect condition that it would produce good flour from poor wheat; the one is a possibility, the other an absurdity. Many of you have mills that are about right, and all you need is good stock to insure your success. Then urge the planting of superior milling wheats.—*St. Louis "Miller."*

AMERICAN SLAPJACK TIMBER.

The production of buckwheat in the United States has not, like that of other grains, kept pace with the increase of population, and according to the census returns it has been continually declining as a whole. In the year 1839 in round numbers 7,000,000 bushels were produced; in 1849, 9,000,000 bushels; in 1859, 17,000,000 bushels; in 1869, 10,000,000 bushels; in 1879 not quite 12,000,000 bushels. The crop of 1839 would have supplied 21 pounds to each inhabitant; that of 1849, 19 pounds; that of 1859, 28 pounds; that of 1869, 13 pounds; that of 1879, 12 pounds. The crop is chiefly grown in the cooler parts of the country, in the regions that are hilly or mountainous. Relatively a larger proportion of it grows at higher altitudes than of any other grain and with

a lower temperature than any other grain except rye. Fifty-nine per cent. of the crop grows between latitudes 41° and 43°, and nearly 81 per cent. between latitudes 40° and 44°. New England produces over 1,000,000 bushels, and the Middle States over 8,500,000; the other States lying along the northern border, Ohio, Michigan and Wisconsin, with the mountainous belt of the Alleghanies extending down into Maryland, Virginia and West Virginia, produce 1,500,000 bushels more, these altogether producing upward of 94 per cent. of the whole crop of the country. It is raised in considerable quantities in Oregon, but the rich soils of the prairie region and the warmer climate of the South are alike unfavorable to its successful growth. It naturally belongs to the cooler and rougher regions, that are not subject to too early frosts, and it can be raised on hillsides and thin soils where other grain can not be profitably raised, but it does not follow that it can not be produced on good level land. It is true it can be grown on poor land and with careless cultivation, but it does better on better land with better treatment. A soil that is moderately fertile, well plowed and harrowed will always produce the best crops.

Our name buckwheat is derived from the German word *buch-weizen*, or beech-wheat, because the kernels are shaped like beech-nuts. Botanically it does not belong to the same order of plants as wheat and rye, but to the order "Polygonaceæ," and the genus "Polygonum," the same genus to which smart-weed belongs. The varieties chiefly cultivated in this country are the silver hull or gray and the black. A new variety, called the Japanese, is well spoken of by those who have tried it, the kernels being large and plump and the yield good. The "rough," "nigger" or Tartarian is not raised much except for feed. The kernels are rough and the corners slightly rounded; it is a hardier plant and yields better than any other variety, but the flour is yellow and slightly bitter.

The time for sowing in the United States extends from the first of May till the middle of August. In Northern Pennsylvania it is usually sown about the last of June or first of July. The later in the season it can be sown and get ripe before frost comes, the better will be the yield, as the late-sown is most likely to have cooler weather at the critical period when the kernels are just forming, and when it is sure to be injured more or less by dry, hot weather. Owing to its liability to be blasted by hot sunshine and to be caught by an early frost, which destroys the kernels that are not ripe, buckwheat is not quite so sure a crop as some other kinds of grain. About one bushel of seed per acre is usually sown in this region, but on good land three pecks are sufficient and will produce the best results. In good years and under favorable conditions the yield is sometimes very large, rising as high as 30 to 40 and even 50 bushels per acre. In unfavorable seasons the yield falls as low as 5 bushels per acre. Thirty bushels are considered a very large yield in this locality, but last year several fields averaged 44 bushels per acre, machine measure. The average for the State of Pennsylvania for the year 1879 was 14.6 bushels, and for Bradford County, Pa., a fraction over 18 bushels per acre.

SEVERAL RECENT "GREATEST" THINGS.

The largest cut diamond in the world is now on exhibition at the great Paris show. It was found in South Africa in 1885 and named the "Imperial" by the Prince of Wales. As soon as it was found it was taken to Amsterdam, where the diamond cutters worked on it for 22 months. It weighs 180 carats and is valued at \$3,500,000.

The three tallest trees in the world are believed to be a sequoia, near Stockton, Cal., which is 325 feet high, and two eucalypti in Victoria, Australia, estimated to be 435 and 450 feet respectively.

The lake which has the highest elevation of any in the world is Green Lake, Colorado. Its surface is 10,252 feet above the level of the sea. In some places it is nearly 300 feet deep.

The largest advertisement in the world is that of the Glasgow "News," cut in the shape of flour beds on the side

of a hill back of Ardenlee, Scotland. The words "Glasgow News" can be seen and plainly read a distance of 4 miles. The length of each letter is 40 feet; the total length of the line 323 feet; the area covered by the letters 14,845 feet. The borders of the beds are sown with white flowers, the center with red and purple. The effect is said to be startling.

The largest sheet or pane of plate-glass in the world is set in front of the D. Billigheimer building on Vine street, Cincinnati, O. It was made at Marseilles, France, by Z. Brazzard and Sons, and measures 186x104 inches.

Custer county, Montana, is the largest county in the United States. Its area is 36,000 square miles. It is larger than the states of Vermont, New Hampshire, Massachusetts, Connecticut, Delaware and Rhode Island combined.

MILLING PATENTS.

Among the patents granted September 3, 1889, are the following:

Wm. A. Cockrell, Dayton, O., No. 410,152, a dust-collector.

Chas. J. Hartley, Decatur, Ills., No. 410,241, an automatic grain-weigher, No. 410,242, a register and automatic stop, and No. 410,243, an automatic grain-weigher.

Marquis F. Seeley, Chicago, Ills., No. 410,336, a grain dump and elevator.

Geo. H. Rich, Geneva, Ills., No. 410,377, a grain-grader.

Nicholas Brennan, Boston, Mass., No. 410,399, a corn sheller and grinder.

Will H. Donner, Columbus, Ind., No. 410,502, a signal for mills.

Among the patents granted September, 1889, are the following:

Hezekiah O. Triplett, Orland, Cal., No. 410,776, a grain-separator.

Kasper H. Schaper, Linn's Mills, Mo., No. 410,857, an automatic grain-scale.

Thomas M. Bales, Dublin, Ind., No. 410,869, a fanning mill.

Nicholas Cornelius, St. Louis, Mo., No. 410,878, a flour-mill, and No. 410,879, a flour-mill.

PARTICULAR attention is invited to the article on color in flour which is reprinted in this issue of THE MILLING WORLD. It is from the pen of an English miller, who has thoroughly investigated the important subject, and doubtless many an American miller will find in it many valuable and practical ideas, which will aid him in solving the complex problem of color in flour. We consider it one of the most valuable contributions to the literature of milling of the year.

The announcement that New Orleans exported over 12,000,000 bushels of corn and quite a large amount of wheat during the past commercial year has called attention to the fact that that city has of late been growing in importance as a grain port.

SPECIAL NOTICES.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,

Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.



CULTIVATING SPONGES IN AUSTRIA—An Austrian savant has obtained a harvest of 4,000 sponges which are the result of an experiment of literally sowing small parts of living sponges in a soil favorable to their production. The Austrian Government is much pleased with the experiment, which is to be repeated on a large scale in Dalmatia. The cost of the 4,000, which have been growing for the last three years, is a little over \$55, every thing included.

GENERAL NOTES.

IN July, 1886, according to General Secretary Turner's report to the Richmond General Assembly, the Knights of Labor possessed 723,000 paid-up members; in July, 1887, according to Secretary Litchman's report to the Minneapolis Convention, the number was 500,000; in July, 1888, when the apportionment was made for delegates to the Indianapolis session, the number was 400,000. What the membership is now can only be conjectured, as the reports of July this year, when the annual census of assemblies was taken, have not been compiled and published. A careful observer of events in the labor world estimates the present membership at something less than 200,000, not all of these even being in perfect and regular standing.

POINTS IN MILLING.

WHERE are all the "cub" millers nowadays? It used to be impossible to visit a mill, large or small, buhr or roller, without finding the omniscient "cub" hard at work acquiring knowledge for himself at the expense of bankruptcy for the owner of the mill. Now I find the "cub" almost as scarce in mills as teeth in the mouths of hens. Is the roller-mill responsible for the disappearance of the interesting "cub" miller?

ONE serious trouble with some milling-machines is a construction that makes it not easy to get at the parts for change, replacement or adjustment. Without making invidious comparisons, merely in the general interest, I will say that, other things being equal, of two machines doing equally good work, purification of middlings, for instance, that machine which has the best arrangement or construction for accessibility to all the principal parts is the one the miller should buy.

I HAVE in mind a machine in a certain line, which does very good work, indeed, its work is hardly surpassed by that of any rival machine in its line, and yet its plan, its construction, almost entirely ignores the convenience of the operator in getting at the parts. Whenever a simple adjustment is necessary, the parts have to be uncovered. One miller operating one of these machines said of it to me one day: "Now, look at that dinged—! If I want to adjust a single screw in it, I have to shut down, put out the fires, take down the shafting, remove the belt, get a derrick, jack the machine around, turn it up, take it all apart, put it together again, derrick it back, dislocate my neck, put up the shafting and belting, start the fire, call in the men from their holiday, and start up. By that time it's next week! Why can't the concern be made so that so much parade is not necessary?"

OF course, even in this case, it was not quite so bad as this grumbling humorist made it out to be, but it is bad enough to call for notice. The maker of such a machine makes a mistake in ignoring convenience in this respect. The best machine in the world could not succeed in holding the market if put together in such a way. The popular machines,

those that stand at the front and find sales whenever sales are to be found, will generally be found to be almost perfect in this respect.

AUTOMATIC milling is a pleasant thing to dream about. It is worth working for, planning for, inventing for. Yet even the most nearly perfect automatic arrangement will never be able to dispense with care and watchfulness on the part of the miller. Flour-making, from the nature of the case, the variety of grains, the nicety and fineness of the processes, and the employment of so many differing and delicate machines, will never become perfectly and purely an automatic process. Some single steps may be made reliably automatic, but others can not be.

I HAVE seen a buhr-mill run on the automatic plan, that is, it ran itself. The owner was an old-timer. He would fill the hopper, start up, and go and sit down, by the stove in cold weather, and by the door in warm weather, and sleep, with the wind blowing through his whiskers, until the hopper was empty and the stones were hot enough to fire the mill. If that old man, now where the sleepy mill no more and the milling revolutions never come, could come back to earth as a roller-miller, he would at once become commander-in-chief of the army of those who demand entirely automatic roller-milling. The best flour he ever made was really only fair feed, but he milled automatically and died happy in the belief that he had fathomed all the mysteries of milling.

I AM afraid that his baneful example is followed to a too great extent by some modern roller-millers. Now and then I run across one who seems to think that, with the equipping of his plant with first-class modern process machinery, he has fulfilled all the requirements and may reasonably expect to be excused from further trouble or attention after starting. No greater mistake was ever made. No more costly mistake was ever made. The man who understands the situation so poorly will fail. He deserves to fail.

INSTEAD of doing away with the necessity of constant watchfulness by equipping his mill with modern machinery, the miller really increases that necessity. All the machines are complicate, delicate, easily disarranged. All the grain is liable to act contrary to what he wishes or supposes to be its action. If he sleeps on the idea that he can neglect a modern intricate mill, he will awake to the fact that he has sacrificed his plant to a false idea.

CHESTNUTICAL CHEERFULNESS.

Smart Attorney—You say the evening wore on. What did it wear on that particular occasion? Witness—The close of day, I presume.—*Omaha World*. "How much is flour, Mr. Spicer?" "I think it is \$8. Just wait a minute." He goes over to the book-keeper. "Has Slowpay paid his bill yet?" "No, Sir." "Ah! Mr. Slowpay, I find flour has gone up to \$13."—*Herald of Trade*. A cracked up diet—Scotch oats.—*Chicago Globe*. An Eastern paper says that "the heaviest batter in the country is Buck Wheat." That Englishman syndicate that is trying to gain control of the Minneapolis mills is evidently after our national flour.—*Boston Transcript*. They have been calling for manufacturing in Mississippi, but no sooner did a muscular Boston man start "a mill" than the Governor called out the militia.—*Port Townsend Argus*. "Dam that water power—" That's right, young man, sometimes a man must swear, or burst, and it does me good to hear you make your swearing useful.—*Northwestern Mechanic*. The mill can only run at intervals, owing to the scarcity of water. If there is not some relief soon the water-wheel is liable to kick up a perfect dust when running.—*Herald, Sauk Center, Minn.* "Have you read 'The Mill on the Floss,' Miss Susie?" he asked of the Mississippi belle. "No, I haven't," she replied curtly. "I think Governor Lowry was right, and I wouldn't read about a disgusting prize fight for any thing!"—*Mobile Register*.

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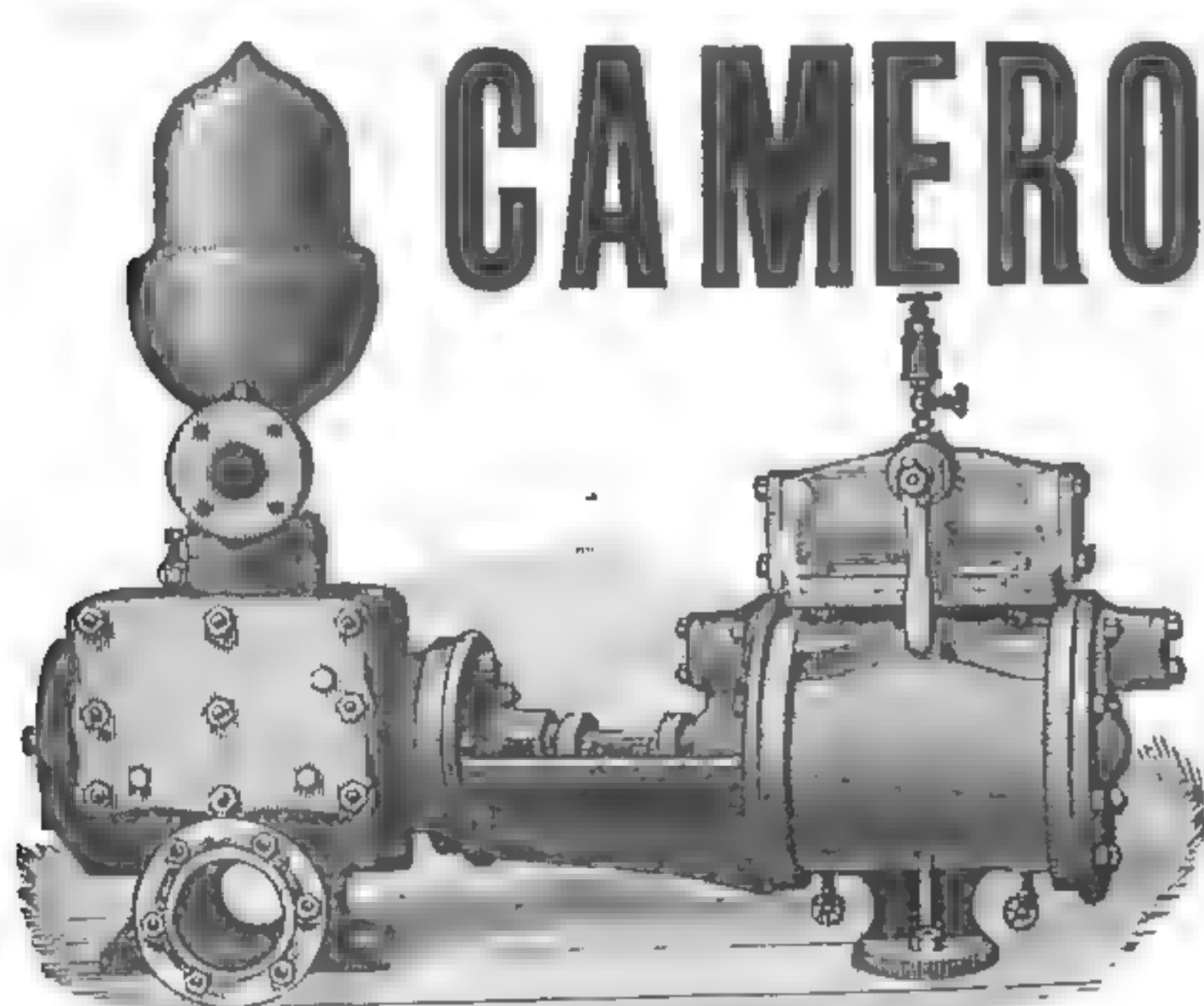
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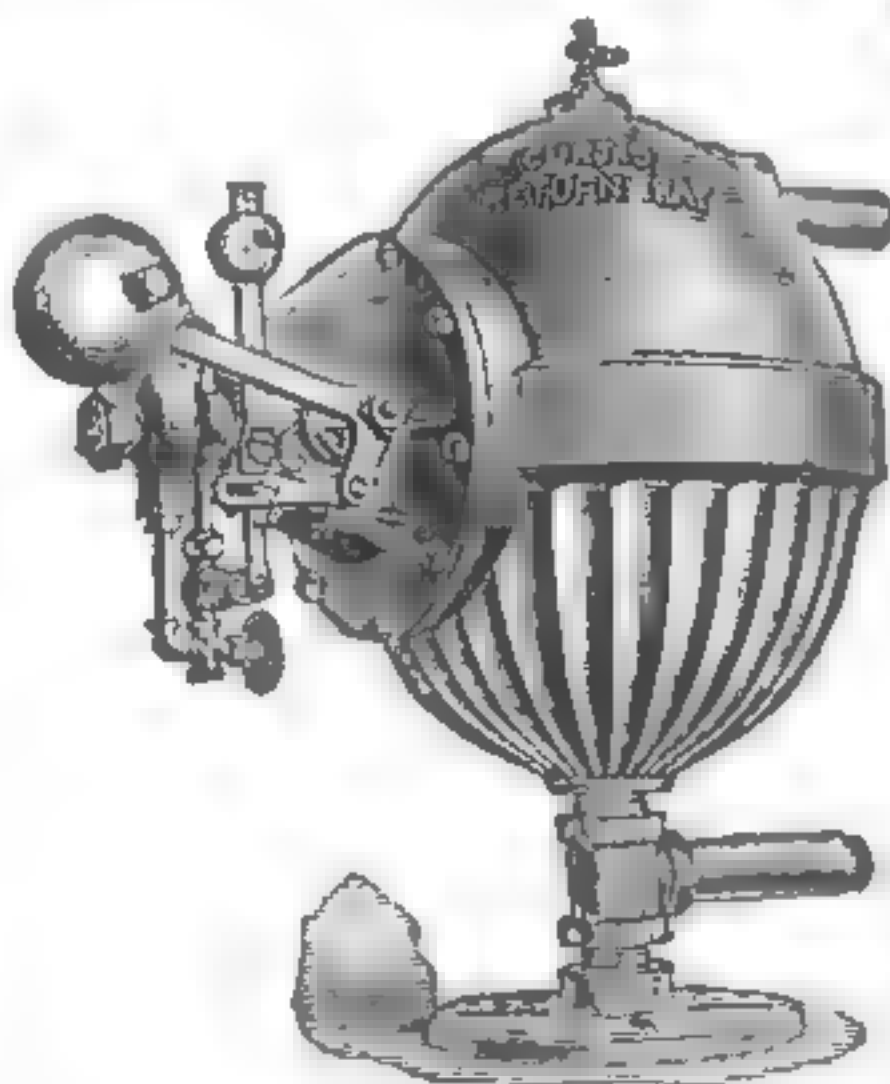
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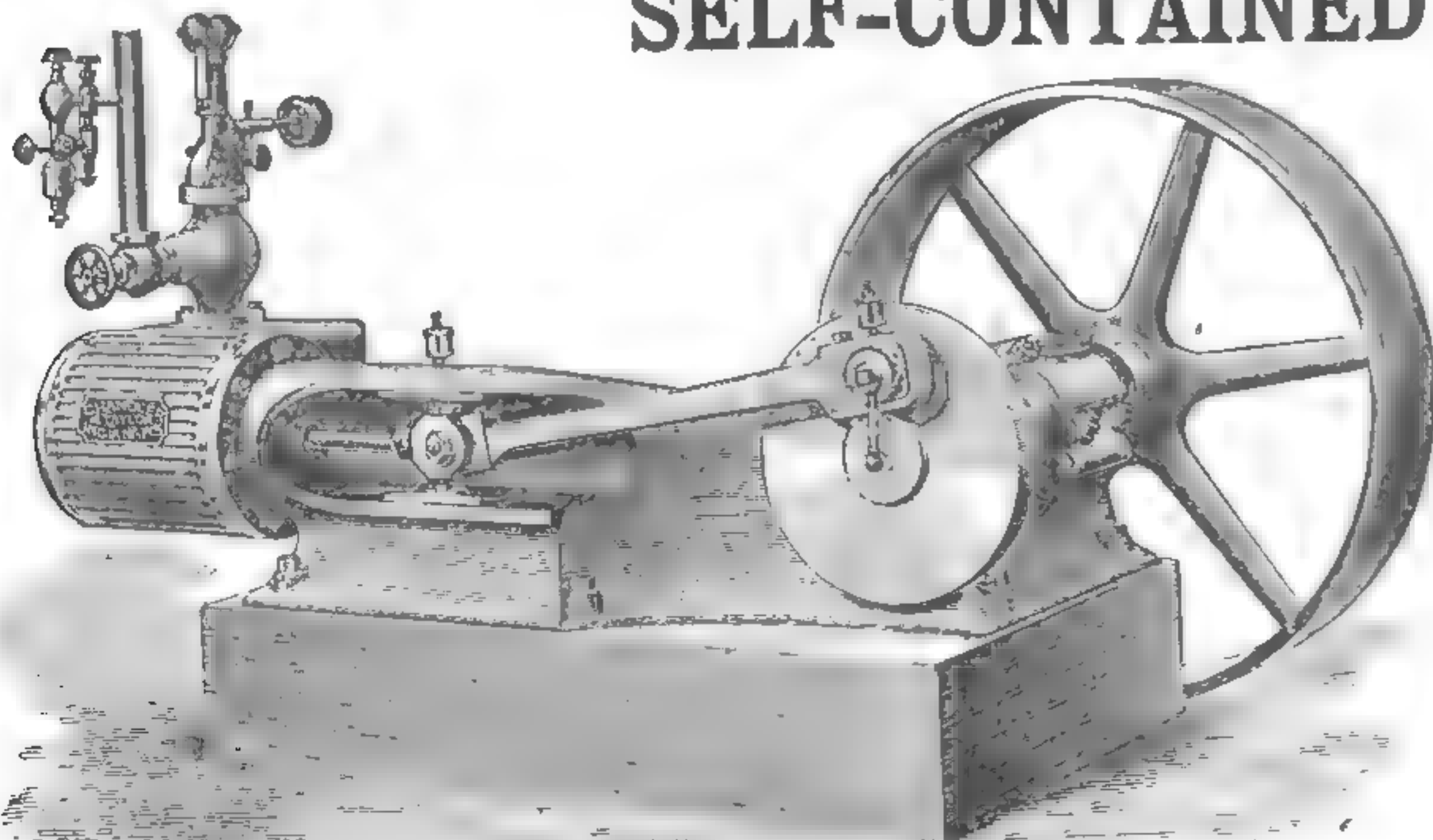
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NOTES AND NEWS

B. B. Herr, miller, Soudersburg, Pa., is dead.
 J. H. Brown, San Saba, Tex., remodels to rolls.
 D. Arrant, Farmerville, La., builds a grist-mill.
 Dr. M. Day, Dykesville, La., builds a grist-mill.
 Chas. H. Platt, miller, Avondale, Pa., assigned.
 Wood Bros., Henryville, Ala., start a grist-mill.
 A. J. Fair, Walnut Cove, N. C., builds a flour-mill.
 L. A. Finney & Son, millers, Manchester, Va., failed.
 D. A. Morrison, Statesville, N. C., builds a roller mill.
 Wilson Bros., Gadsden, Ala., improved their corn-mill.
 C. W. Ennis, Milledgeville, Ga., improves his flour-mill.
 Grice Bros. & Wade, Lewisburg, Ky., build a flour-mill.
 Dodson & Kinton, Eaton, Tenn., enlarge their flour-mill.
 H. H. Hodgins' grist-mill, Red Springs, N. C., flood-wrecked.
 F. H. H. Holloway, Marble Falls, Tex., will build a grist-mill.
 Rounds & Martens, millers, Sioux City and Hinton, Ia., dissolved.
 W. H. Barrett's flouring-mill, Harrisonville, Mo., burned; loss \$35,000; insurance \$11,000.

The Houston Corn Mills Co., Houston, Tex., failed and transferred stock to a few creditors.

Stanley & Hagan, Stanley, Ky., remodel their flour-mill and want new boilers and machinery.

R. E. Kelley, Beaumont, Tex., has points on a new 125-barrel roller flour-mill to be built at that place.

Scott & Davis, millers, Farmville, Va., have sold their plant to Duvall, Robertson & Co., who will enlarge and operate it.

E. A. Redford and A. Stark, of Knowlton, Wis., will build a 75-barrel roller flour-mill at Winchester, Tenn., during the fall.

The Consolidated Roller Mill Company, of Chicago, began an action September 10 in the United States Circuit Court at Topeka, Kan., against the Great Western Manufacturing Company, of Leavenworth, for infringements of the Wm. B. Gray roller-mill patents.

The National Pulley Covering Co., of Baltimore, Md., have recently received their eleventh order for "Covering" from Henry McShane & Co., iron and brass founders, of that city, and their fourth from B. Gill & Son, of Trenton, manufacturers of threshing-machines. Their August business came from twenty different states and Canada, this success being attributed to the wonderful increase in speed of machinery from the use of this covering.

The J. B. Allfree & Co., Indianapolis, Ind., have recently booked the following contracts: Rice Bros., Ladoga, Ind., a 25-barrel mill; Hartig Bros., Washington, Ind., a 30-barrel mill, which includes a full line of "Success" bolters and "Keystone" roller-mills. They also report sale of special corn-meal milling-machinery to Parrish & Moor, Dresden, Tenn., John Hanning Distillery Co., Owensboro, Ky., Petersburg Milling Co., Petersburg, Ky., and the Glenmore Distillery Co., Owensboro, Ky. They also report sales of numbers of special machines of their own manufacture, including bran-dusters, sieve-scalpers, bolters and others.

Some Indianapolis corn-millers have filed with the Interstate Commerce Commission a complaint against the Pennsylvania Railroad Company for discrimination against their business in the matters of east-bound freights. The complainants say that defendants now charge as freight on corn from Indianapolis to New York City eighteen and one half cents per 100 pounds, at the same time charging and collecting as freight on ground corn, cracked corn and corn-meal, grits and hominy and refuse, or offal, from the manufacture of said cereal, viz., feed, at the rate of 23 cents per 100 pounds, thereby affording and giving a direct and immediate advantage to the millers at the East of $4\frac{1}{2}$ cents per 100 pounds, and placing upon complainants a disadvantage and consequent loss exactly corresponding to the gain of the Eastern competitor.

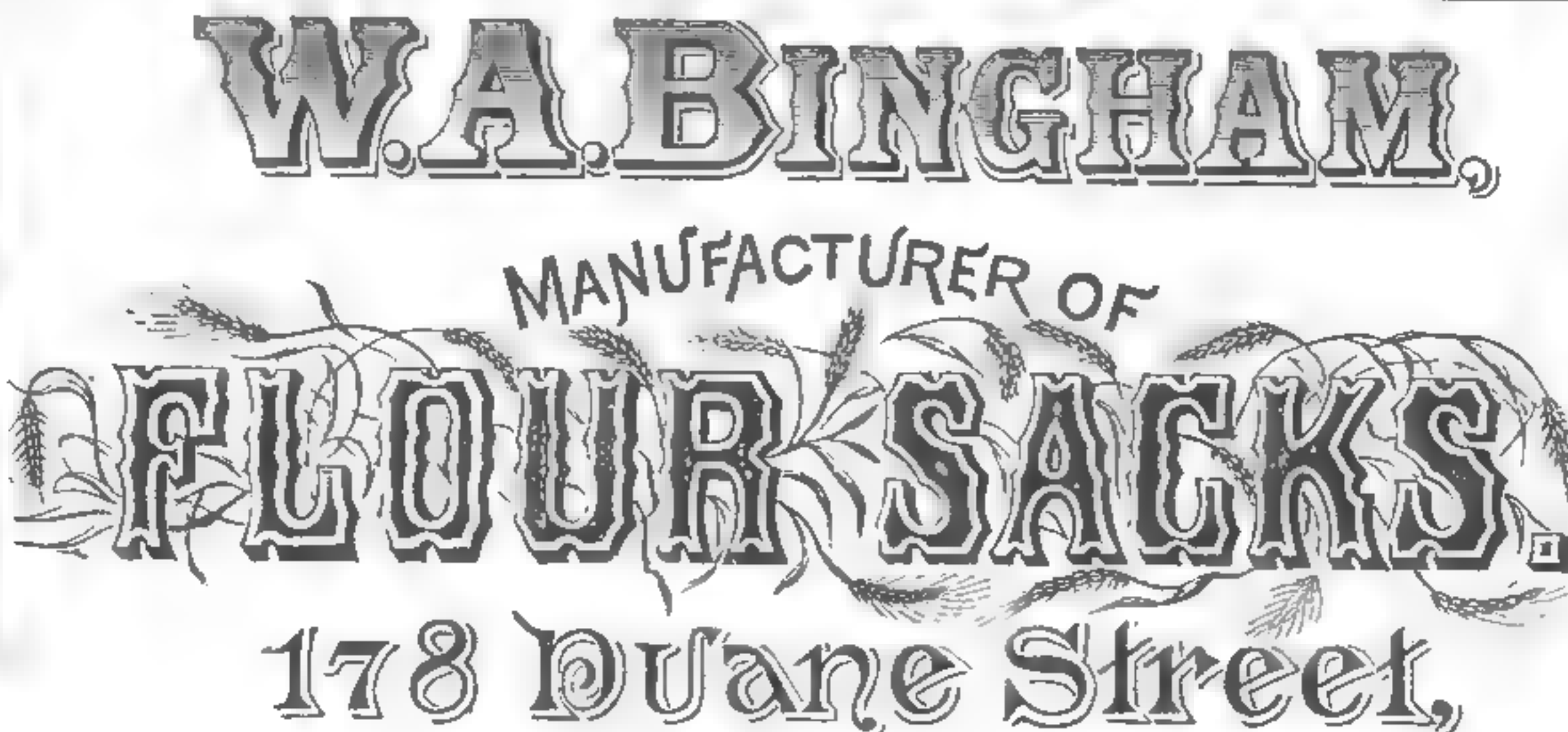
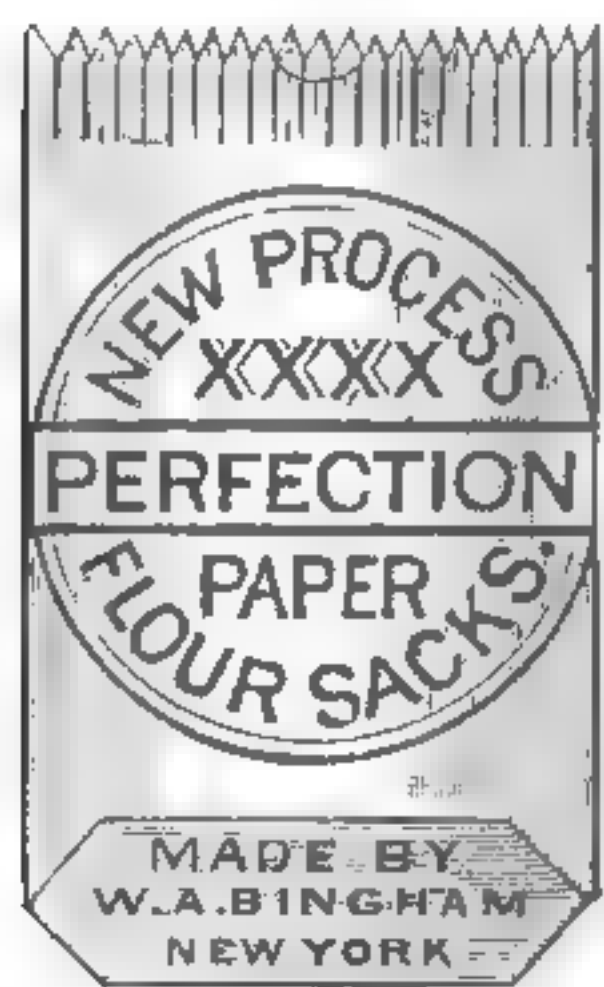
A St. Louis grain firm make the following estimates of this year's wheat crop, taking the Government's figures of the crop of 1884 as the comparison: "The condition of the winter-wheat crop of 1884 at harvest was 94, the area 28,345,708 acres and the production 356,253,000 bushels, from which last two items we deduce the average yield of 12.56 bushels per acre. The condition of the spring-wheat crop of 1884 at harvest was 98, the area 11,130,177 acres, the production 156,510,000 bushels, the average yield per acre 14.06 bushels. The condition of this year's winter-wheat crop at harvest was 92, which, compared with the condition and yield of the crop of 1884, means an average yield of about 12.3 bushels per acre. Taking this by the Government's estimate of acreage for this season, 24,951,651 acres, we get a production of 306,905,307 bushels. The condition of this year's spring-wheat crop at harvest was 81, which, compared with the condition and yield of the crop of 1884, means an average yield of about 11.6 bushels per acre, and on the Government's estimated acreage of 13,786,021 acres, a production of 160,193,564 bushels. Unless the figures mislead, 467,000,000 bushels is about the crop to be calculated on for the United States this season."

Says Chicago Daily Business: The country is full of oats. We have not only secured the present crop, but there is still lots of old oats on hand. Take northern and central Illinois, for example; the acreage is the largest on record. Threshing-machines are turning out seldom lower than 40 bushels per acre, and countless crops running from 50 to 60 bushels per acre. The oats which are now being threshed are the shocked oats. A much larger percentage than usual has gone into stack. At the present time the shocked oats are more or less damp. Threshing machinery has now been brought to such high degree of perfection that steam-threshers the present week have turned out from seven o'clock in the morning until sunset over 1,800 bushels during that time. Prices of oats at points of production, commencing at Nebraska, where they are selling at 10@12 cents, in Iowa 14@16 cents, and in Illinois 17@20 cents are ruinously low. Four years of good crops of oats brought the acreage this season to its maximum. The good yields during that period have brought prices to a minimum, and farmers will be very slow to put out another season as many oats as were sown the present spring. At harvest the oat crop was subjected to tremendous rains, and the consequence is that in the entire area which has just been gone over there is a much larger percentage of wet and stained oats than usual.

BOOKS AND PAMPHLETS.

Good Housekeeping in the number for September 14, just issued, announces another new departure that will be received with intense interest by all readers of the magazine, old and new. It is a new department, to be entitled "Woman's Work and Wages," and to be edited by Mrs. Helen Campbell, who has acquired fame through her studies, investigations and writing in the field of industrial and social economics among women. The subject covered in the title is broad and important, more important to-day than ever before. It covers not only domestic service and labor for employes in factories and stores, but the innumerable other directions in which the efforts of women are directed toward self-support, or to assisting in the support of the home. Under Mrs. Campbell's trained direction, the department will immensely enhance the great value and usefulness of *Good Housekeeping* in the homes of the world.

Mr. Frank R. Stockton has written a new and characteristic story called "The Merry Chanter." It will begin in the November *Century* and run through four numbers. The story takes its name from a vessel which started from a Massachusetts port on a peculiar cruise. The owners, a young married couple, are on board, and the vessel is commanded and manned by four villagers of unusual experience. Mr. Dana Gibson will illustrate it. The November *Century* is also to contain a new story by Mark Twain. During the coming volume *The Century* is to have an illustrated series of articles on the French Salons of the seventeenth and eighteenth centuries, including pen portraits of many of the leaders and a detailed account of the organization and composition of several historical salons. A great number of interesting portraits will be given with the series.

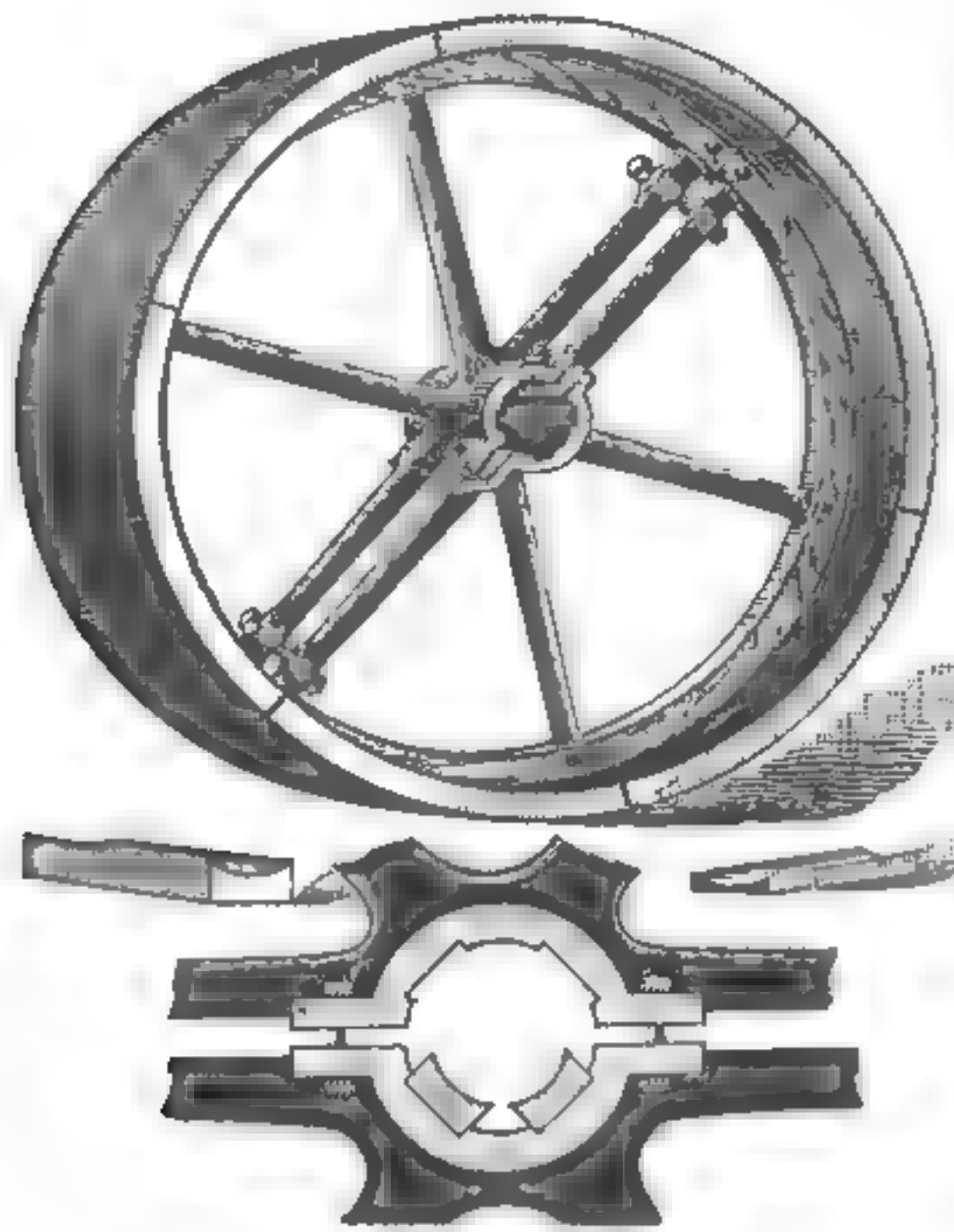


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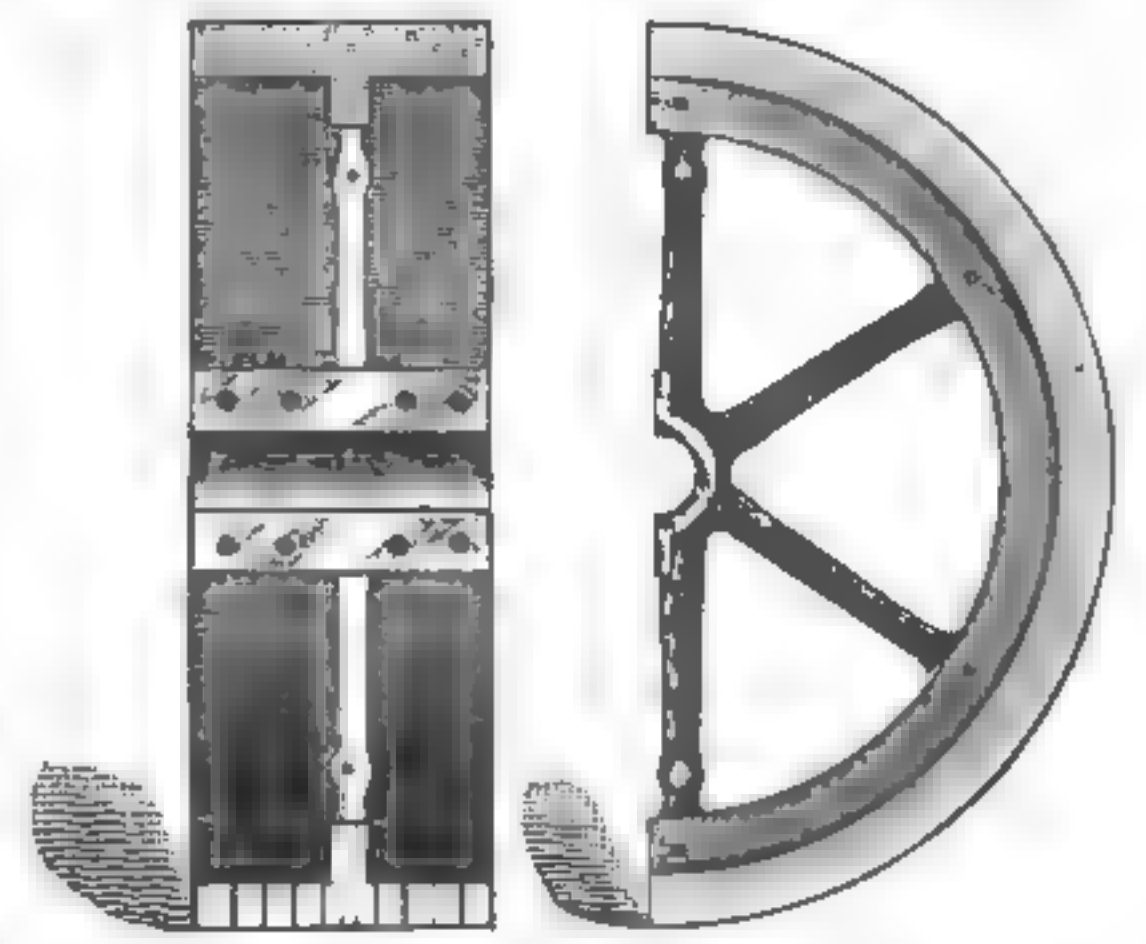
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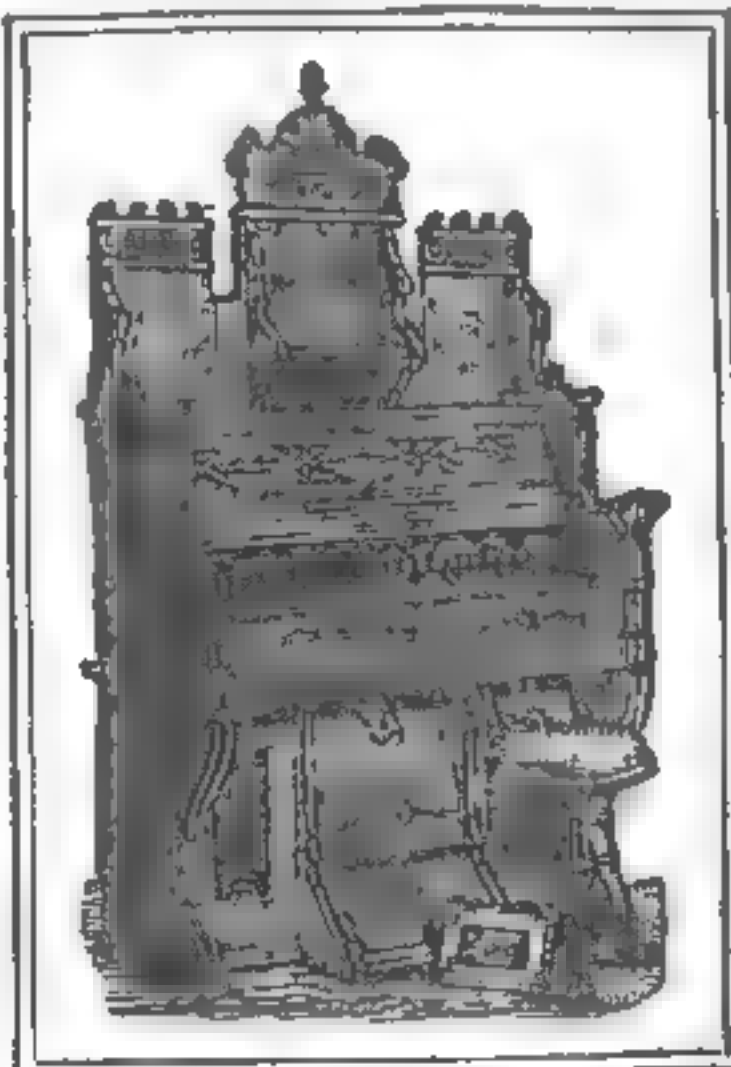
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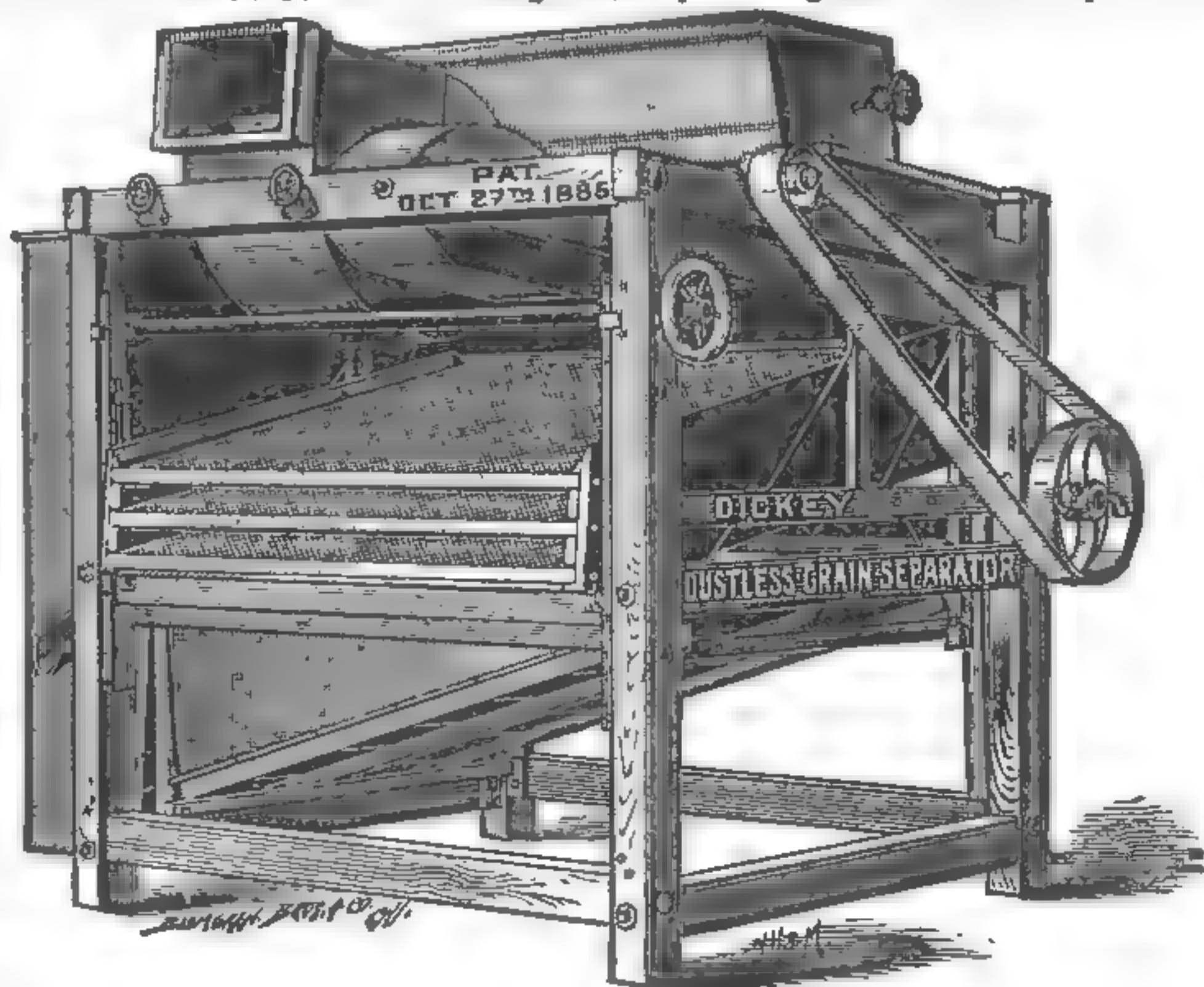
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EUROPEAN ECHOES.

DURING the past 17 years the United Kingdom has imported the enormous quantity of 2,107,808,423 bushels of wheat, of which 1,078,327,350 bushels have been supplied by the United States, while Russia has sent a little over 300,000,000 bushels, India 174,554,834 bushels, Australia a trifle over a 100,000,000 bushels, and other countries 453,038,757 bushels. The average yearly importation of wheat for this period has been 123,988,000 bushels. The year of greatest importation was 1883, the smallest 1872, 1874 and 1866. Of recent years 1884 and 1886 were reserved; 1885 and 1887 free in their purchases. Last year's imports were a trifle smaller than in 1887.

WILLIAM E. BEAR, the well-known agricultural writer of London, England, writing on the British crop situation, August 21, gives the wheat area in Great Britain at 2,449,589 acres in 1888. He says: "If we add last year's wheat area in Ireland and the small Islands, 103,989 acres, we get a total wheat area for the United Kingdom of 2,553,578 acres. At 30 bushels an acre the production will be in round figures 76,607,000 bushels. Deducting 8,000,000 bushels for seed and other farm uses, we have 68,607,000 left for human consumption, toward a total requirement for twelve months of about 216,000,000 bushels. According to this reckoning we shall need to import about 147,393,000 bushels during the cereal year beginning on September 1, if our low reserve stocks are not to be even lower than they are now at the end of the period. Apparently we shall require quite as much wheat as the United States can spare, leaving the surplus in India and small sources of supply to meet the net deficiency in the continent of Europe, which will probably be at least 40,000,000 bushels more than it was last year. This is only a rough estimate, and it is not worth while to go into detail until official reports from European countries up to the date of the completion of harvest are available. I believe the deficiency to be made good from extra European sources will not be far short of 230,000,000 bushels. That any such quantity can be obtained at current prices seems to be entirely improbable. I have just received from the Agricultural Department reports on the crops in Denmark and some of the most important districts of Prussia. In Denmark the wheat crop is said to be 'considerably under middling,' while for east and west Prussia, Posen and Silesia it is put down as only 50 per cent. of an average. The crop is much under average in Russia, Austria-Hungary and Roumania, the three considerable wheat-exporting countries of Europe. It is now stated to be very poor in Montenegro, and in Holland and Belgium it is barely up to average, if as good as that. The Italian crop is deficient, but not as badly so as it was last year, while in France, Spain and Portugal good crops have been gathered in. According to the official report from India the outturn in that country is 6,510,879 tons, or 237,147,856 bushels of 61½ pounds, the weight at which Indian wheat is sold ex-ship. Last year's crop was equal to 260,372,800 bushels, and the exports in 1888-89 were 32,088,453 bushels. Thus the deficiency this year as compared with last year's production is only about 9,000,000 less

than the exports from the crop of 1888. We are told in the report, moreover, that prices in India are higher than they were a year ago, stocks of food grain generally being less in consequence of the partial failure of the early crops of this season (last autumn's pulse and other crops being probably meant). Under such circumstances there is surely no reason to expect heavy shipments from India at any thing like current prices in Europe. As I am merely a consumer, it is not to my interest to write up the prices of wheat, but I entirely fail to see the justification of current low prices, and I believe that there must be a rise before next summer. I have said nothing of the European rye crop, which is generally below average. As rye takes the place of wheat to a great extent in many European countries, this makes the deficiency in the wheat production practically greater. Probably my rough estimate of the net European deficiency is much within the mark, my anxiety being not to exaggerate."

VERY INTERESTING TO MILLERS.

Millers are directly interested in the following call, issued by the Farmers' Federation at their recent convention at Topeka, Kansas. This is the call:

Whereas, That by reason of new systems in business and the combinations against us we are not, as an agricultural class, enjoying equal privileges with the manufacturing and commercial classes, and from the inequality of exchange have for the past 10 years been sorely oppressed by the low prices of farm products; and

Whereas, In consequence of the depressed condition of the wheat market and the conflicting reports of the world's supply of this cereal, be it, therefore,

Resolved, By the charter members and stockholders of the Farmers' Federation that a convention of wheat-growers of the Mississippi Valley be and is hereby called to meet at St. Louis on Wednesday, the 23d of October, 1889, for the purpose of discussing measures for relief and to form a wheat-growers' association.

Resolved, That the apportionment of representatives of said convention be one delegate from each county in the respective states and territories included in the Mississippi Valley; and that the primaries to appoint delegates to said convention be held at the county seats on Tuesday, the 1st day of October, 1889; and that we request that the proceedings of said primaries be immediately forwarded to this office, Topeka, Kans.

Resolved, That any farmer in the United States or territories, who has grown 500 or more bushels of wheat the past year and shall certify the fact to the president before the meeting of the said St. Louis convention, may be admitted as a delegate to said convention.

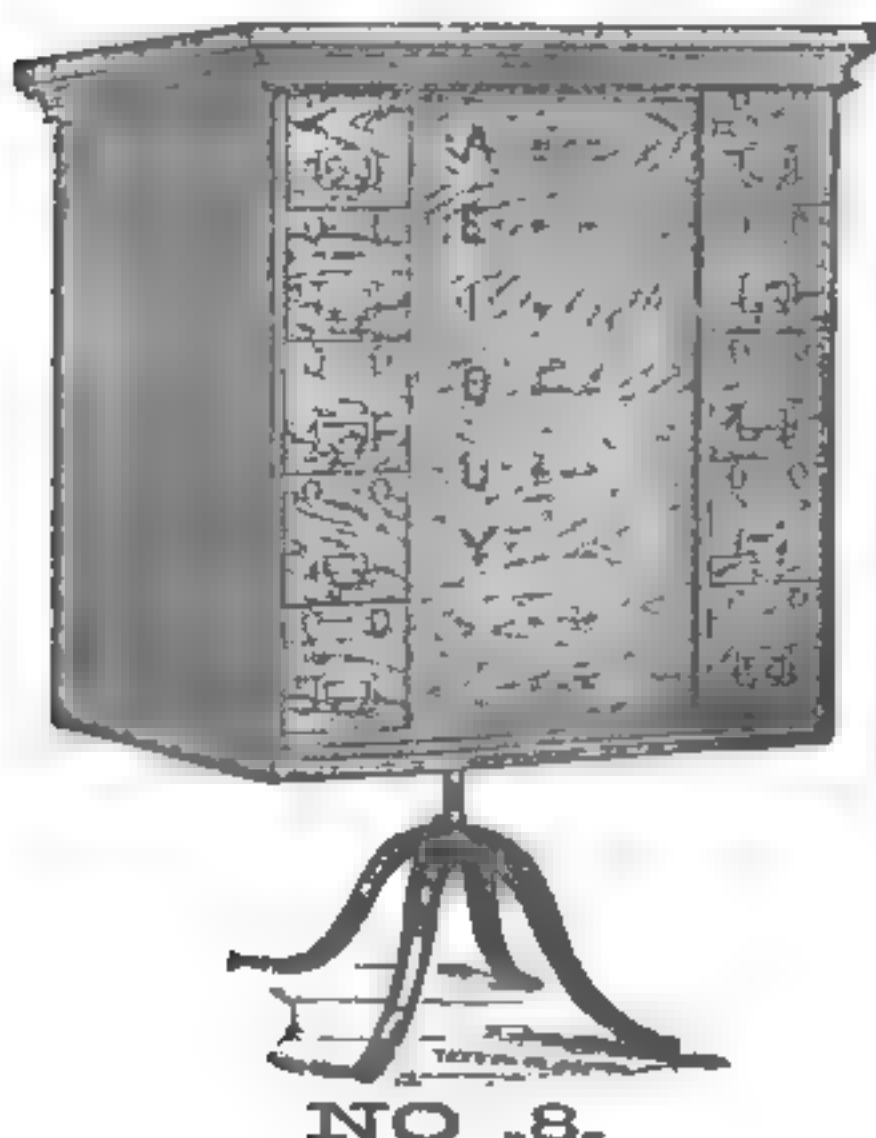
Resolved, That we advise the farmers of the Northwestern states and territories to hold their wheat off the market until after the meeting of the St. Louis convention of wheat-growers, unless such prices be offered as will justify a reasonable profit over the cost of production, or \$1 per bushel for wheat. Farmers assenting to this suggestion are requested to send their names to this office with statement of bushels of wheat on hand, grade, and other facts concerning their product.

Not much progress has been made yet in punishing the elevator managers of Buffalo whose irregularities were recently exposed. "Leaden-footed Justice" should have her pedal extremities done over in a lighter metal, aluminum, for instance. Lead is too heavy in cases of this sort.

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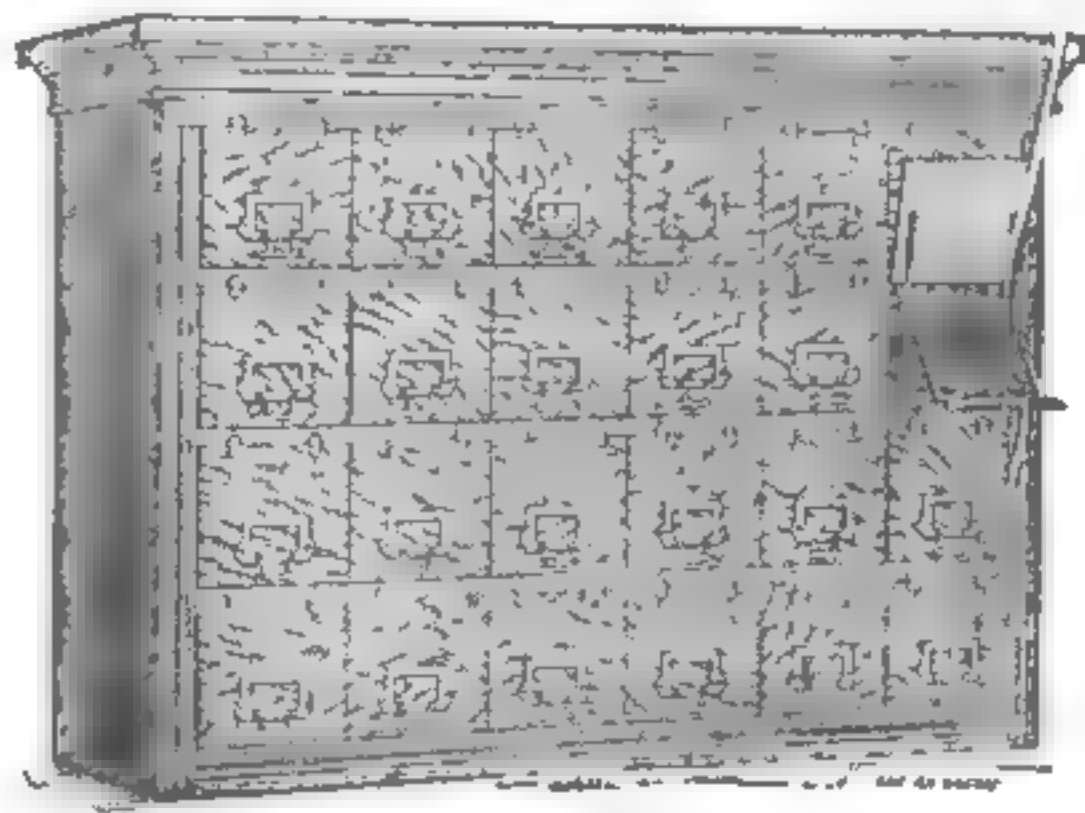
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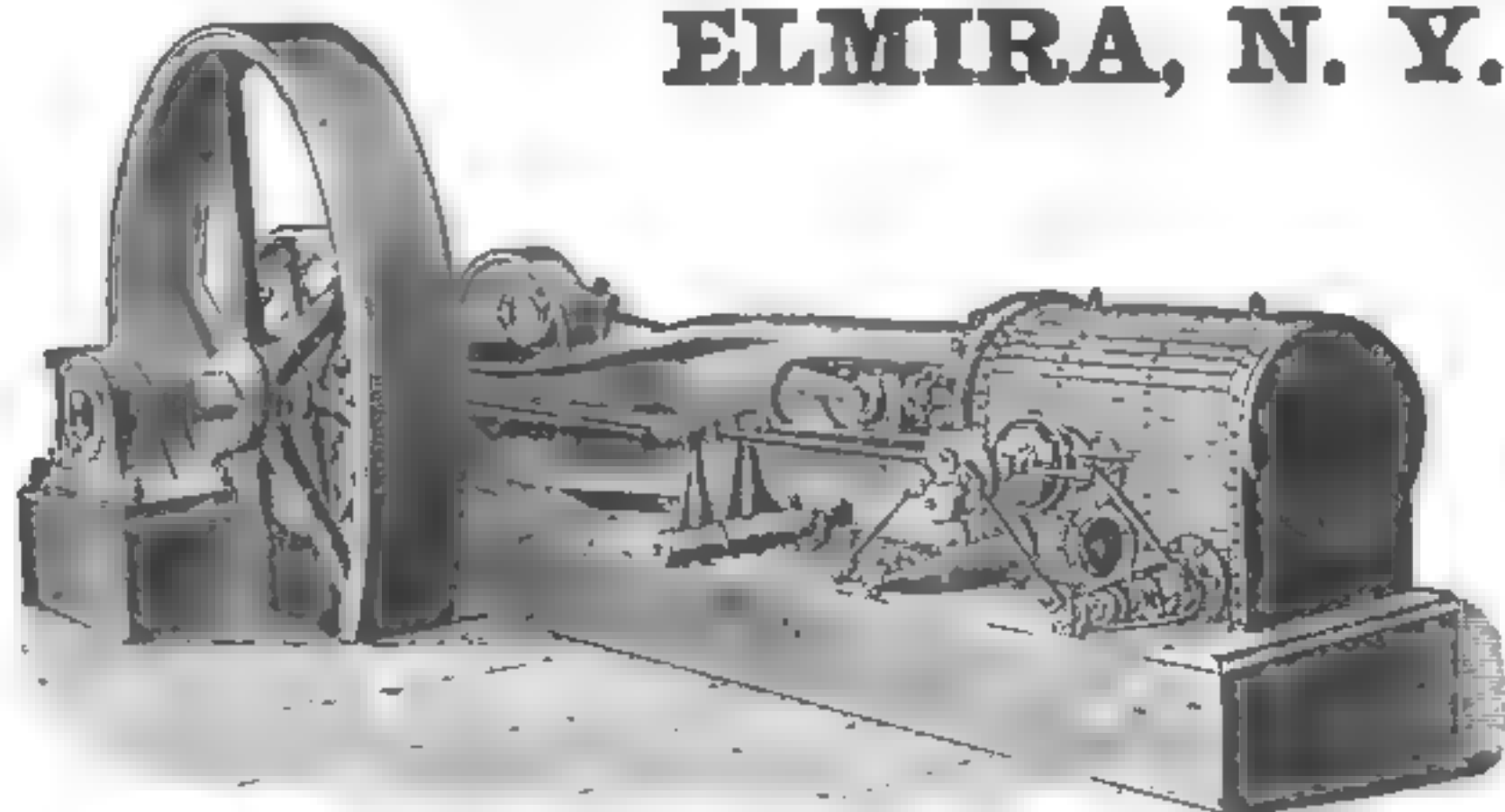
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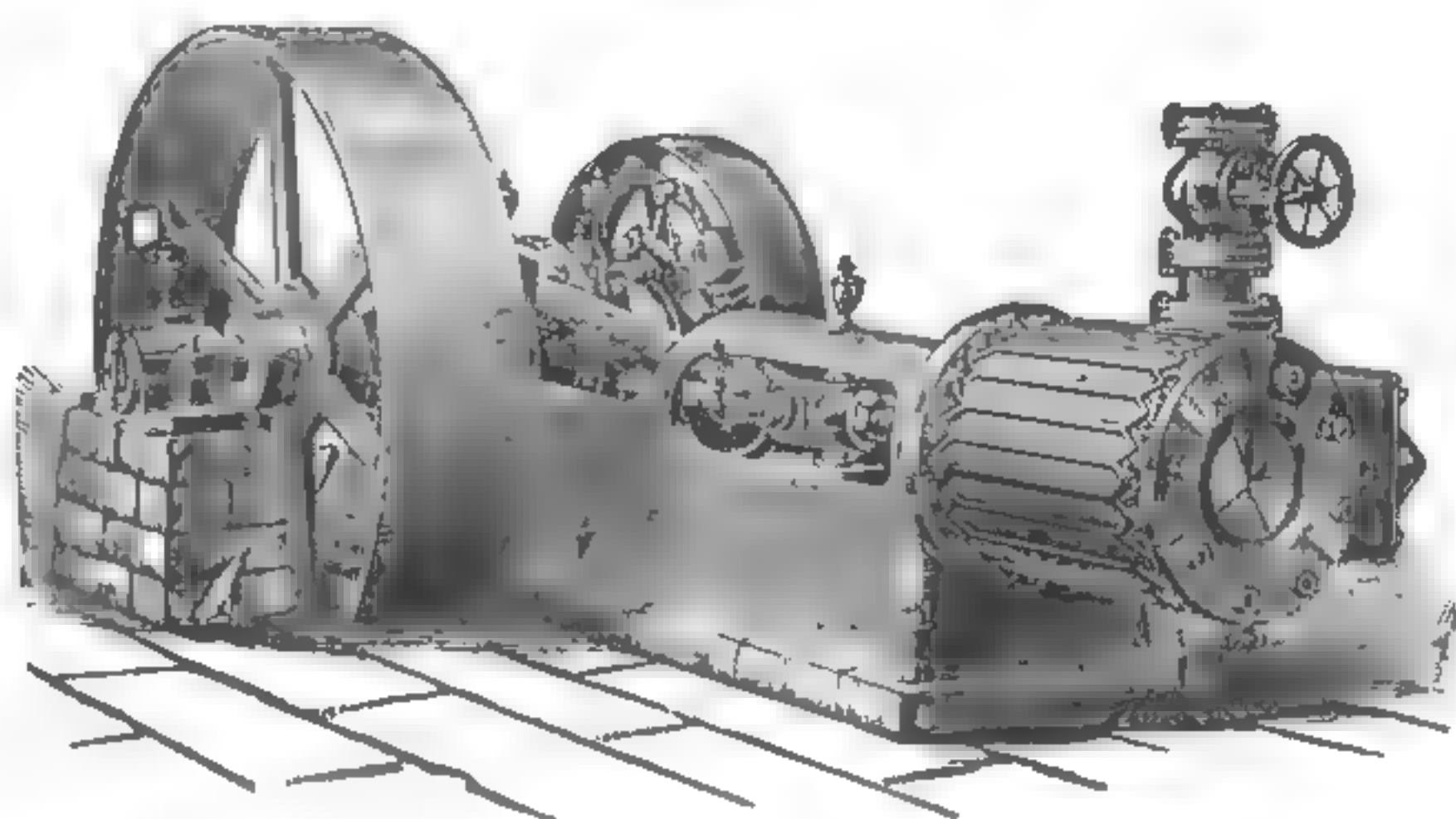
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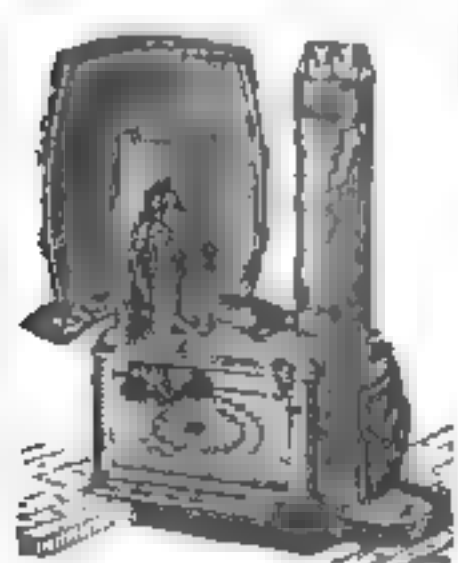
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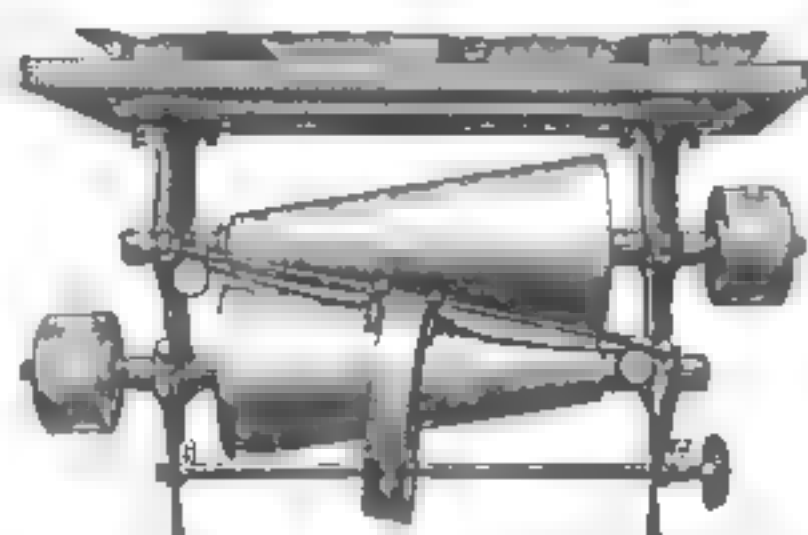
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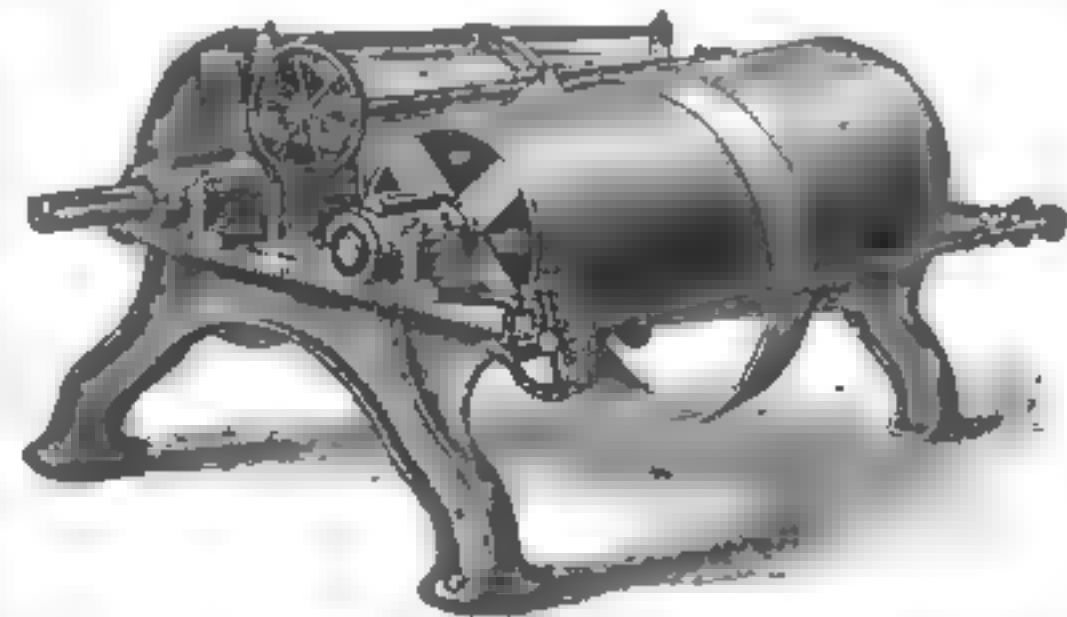
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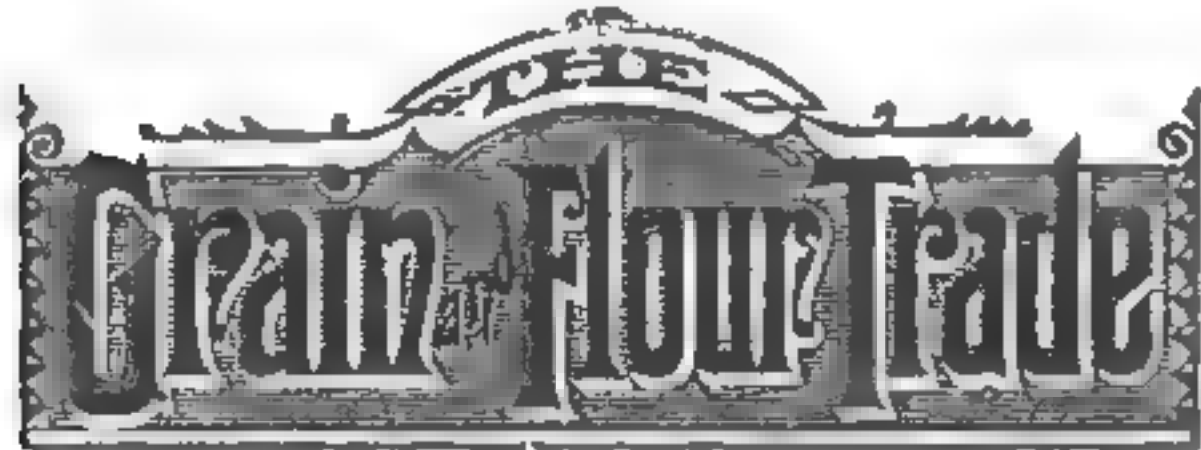
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OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Sept. 14, 1889.

Friday of last week brought lower, weaker and more active markets all around on increasing receipts and decreasing demands, excepting corn. September wheat closed at 83½c. Options 1,732,000 bushels. Exporters did some trading. September corn closed at 42c. and oats at 25½c. Wheat flour was dull and easy, with small trading. The minor lines were featureless.

Saturday brought dull, weak, drooping, unchanged and featureless markets. September wheat closed at 83½c. Options 680,000 bushels. September corn closed at 42c. and oats at 25½c. Wheat flour was dull, neglected and nominally unchanged. The other lines were quiet and featureless.

Monday brought irregularity in wheat and a "surprising" visible supply statement, which showed a decrease instead of the anticipated increase. September wheat closed at 83½c. Options 1,380,000 bushels. September corn closed at 42½c. and oats at 25½c. Wheat flour was in only moderate trading. Prices were not quotably changed. The other lines were without marked features. The visible supply in the United States and Canada was:

	1889. Sep. 7.	1888. Sept. 8.	1887. Sept. 10.
Wheat.....	14,098,032	30,437,630	31,210,890
Corn.....	12,090,698	9,089,467	7,106,089
Oats.....	6,111,237	4,424,748	4,387,518
Rye.....	980,706	378,553	281,814
Barley.....	295,743	109,565	514,054

Tuesday brought some improvement in the wheat market and a generally better tone in other lines. The news was chiefly "bull," including a report of poor grading at Chicago and that Europe would require at least 188,000,000 bushels of wheat to supply her deficiency. The government report also was bullish in character. It made the general condition of spring and winter wheat 87.6 per cent; a higher average was expected. Condition of winter wheat 89.4 against 92 July 1; condition of spring wheat 83.9 against 81.2 July 1. September wheat closed at 83½c. Options 1,908,000 bushels. September corn closed at 42½c. and oats at 26½c. Rye grain was slow at 55½c. for No. 1 State delivered, 50c. for No. 2 Western delivered, and 46½c. for car-lots ungraded on track. Barley was in small demand. Malt was dull at the following quotations: Two-rowed State 75½c. prime six-rowed 82½c.; country-made Canada 85½c. for good to fancy; city do 90c. for prime, though held at 90½c. for the range. Mill-feed was without quotable change, and the sales were on a small scale. At mills and on track 40 lb, 50½c; 60-lb the same; 80-lb the same; 100-lb and sharps 70½c; rye 70c. Other kinds nominal.

Wheat flour was steadier with wheat. The other lines were unchanged.

Wednesday was a day of somewhat unsettled markets. The government crop report was the sensation of the day. The surplus of wheat was the point to be settled. The bears have been claiming that the wheat surplus is at least 125,000,000 bushels, but the bulls used the report to show that it is only 100,000,000 bushels, or even less. Other estimates ranged from 50,000,000 bushels to 112,000,000. Exporters appeared indifferent to the report, showing that European importers of wheat are satisfied that they will be able to secure all the wheat they need at fair prices in the United States. They propose, evidently, to let the American holders carry the grain and pay the storage charges until it is needed in Europe. September wheat closed at 83½c., against 98c. on the same day last year. Options only 1,600,000 bushels. September corn closed at 42½c., against 55c. a

year ago. Damage to corn by frost was reported in Dakota and Montana. September oats closed at 26½c., against 30½c. a year ago. Trade was small.

Wheat flour was firmer with the advance in wheat, though prices showed no decided change. The quotations for the day were:

SPRING FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.50@1.75	\$....@....
Fine.....	1.90@2.10	2.05@2.15
Superfine.....	2.15@2.35	2.40@2.70
Extra No. 2.....	2.40@2.65	2.65@2.90
Extra No. 1.....	3.10@3.35	3.35@3.90
Clear.....	3.20@3.50	3.50@3.65
Straight.....	3.85@4.25	4.25@4.85
Patent.....	4.80@5.10	5.20@5.40

WINTER FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.65@1.90	\$....@....
Fine.....	2.15@2.40	2.25@2.50
Superfine.....	2.50@2.65	2.50@2.70
Extra No. 2.....	2.55@2.80	2.65@2.90
Extra No. 1.....	2.95@4.00	3.10@3.95
Clear.....	3.50@3.90	3.85@4.00
Straight.....	4.10@4.25	4.30@4.40
Patent.....	4.35@4.50	4.60@4.75

CITY MILLS.		
	Sacks.	Barrels.
W. I grades.....	4.20@4.30	
Low grades.....	2.50@2.60	
Patents.....	4.95@5.45	

The other lines were quiet and generally not quotably changed in price.

Thursday brought no change of importance in the grain markets. September wheat closed at 84½c. Options 1,576,000 bushels. September oats closed at 26½c., and corn at 42½c. Trading in both was light. Rye grain was quiet at 55½c. for State. Barley was quiet at 70½c. asked for Canada. Barley malt was slow at 75½c. for 4-rowed and 2-rowed State, and 85½c. for Canada. Mill-feed was slow at 52½c. for bran, 72½c. for middlings and 70½c. for rye feed.

Wheat flour was steady. Receipts and sales moderate. Following are the prices of some brands for the day in the New York market: Low extras \$2.50@2.90; city mills \$4.20@4.35; city mills patents \$4.65@5.50; winter wheat low grades \$2.50@2.90; fair to fancy \$3.10@4.75; patents \$4.15@5.00; Minnesota clear \$3.35@4.25; do straights \$4.00@5.10; do patents \$4.35@5.60; rye mixtures \$3.35@3.85; superfine \$2.15@2.85.

Rye flour was steady at \$2.65@3.15. Cornmeal was steady at \$2.45@2.75.

BUFFALO MARKETS.

WHEAT—There was a fair demand for hard wheat to-day; 6,000 bu new sold at 86½c spot and 1 carload No. 1 Northern at 84c. early; but at noon holders were asking ¼c higher on these grades; about all the hard wheat of crop '87 and '88 is cleared up. No. 1 Northern (Chicago) was quoted at 88½c, and No. 2 spring at 85c. At the close new No. 1 hard was higher, 87c asked spot and No. 1 Northern 84½c. Winter wheat in good demand and market strong and on some grades higher; sales reported were 3 carloads Michigan at 81½c, 1 do No. 2 amber at 79½c, 1 do milling long berry at 82½c, 1 do No. 2 extra white at 81½c, and 1 do No. 3 extra do at 77½c on track. **CORN**—In moderate demand and market quiet but steady. No. 2 corn was quoted at 88½c, No. 3 do at 88½c, No. 2 yellow at 39c, and No. 3 do at 38½c in store. A few carloads were sold at these figures. **OATS**—In fair demand but light offerings and market firmer. About the only sale reported was 4 carloads No. 2 white at 25½c; No. 2 do was quoted at 24c, and No. 2 mixed 24c bid on track. **RYE**—Firm; No. 2 quoted at 48c on track. **BARLEY**—Neglected. **CANAL FREIGHTS**—Firm and higher. Wheat to New York 5c; corn 2½c; oats 3½c; flaxseed, 5c. Corn to Albany, 4c; corn to Schenectady and Rotterdam, 3½c; oats 2½c; corn to Utica, 2½c; corn to Syracuse, 2½c; wheat, 2½c; wheat to Rochester, 2c. Lumber rates to Albany, \$1.75; to New-York, \$2.25. **RAILROAD FREIGHTS**—To New York, Baltimore and Philadelphia rate points on grain, flour and feed, 13c per 100 lbs; to Albany and West Troy, 10½c; to Boston, 15½c. **FLOUR**—City ground—Patent spring, \$6.00@8.25; straight Duluth spring, \$5.75@6.00; bakers' spring, best, \$5.50@5.75; do rye mixture, \$4.75@5.00; patent winter, \$5.75@6.00; straight winter, \$4.75@5.00; clear winter \$4.50@4.75; cracker, \$4.50@4.75; graham \$4.50@4.75; low grade, \$2.75@3.00; rye, \$3.00@3.25 per bbl. **OATMEAL**—Akron, \$6.00; Western \$5.75 per bbl; rolled oats, infantes, 79 lbs \$3.25. **CORNMEAL**—Coarse, 85c; fine, 90c; granulated \$1.50 per cwt. **MILLFEED**—City ground coarse winter, \$12.00@12.50; fine winter, \$12.00@12.50; finished, \$14.00@14.50 per ton; coarse spring, \$11.50@12.00; fine spring, 11.50@12.00.

The Government report of the condition of the crops on September 1 is appended in detail, and calculating upon that data the amount of this year's crop of winter wheat is 812,294,863 bushels, and of spring wheat 162,024,547 bushels, or a total of winter and spring wheat of 474,319,410 bushels. Corn on the showing of condition should, if its present status is maintained to maturity, produce a crop of 1,953,000,000 bushels; this takes into account an increase of the area in the crop this season over last of 1,300,000 acres. The September crop report makes the general average of corn 91, a reduction of nearly 5 points; of winter wheat when harvested 89.4, from 92 on the 1st of July; of spring wheat 83.9, an increase from 81.2 in August. This makes the general average of all wheat 87.6. The general condition of oats is 90 instead of 92.3 last month; of rye 91.6; of barley 88.9, instead of 90.6; of buckwheat 93.1, instead of 95.2; of tobacco 76.2, a reduction from 84.4. The corn crop is a week late in a large proportion of its breadth. In the seven surplus states the figures for condition are: Ohio 81, a loss of 6 points; Indiana 81, loss 6 points; Illinois 87, loss 3 points; Iowa 94, loss 6 points; Missouri 93, loss 3 points; Kansas 98; Nebraska 96. The quality of western grain, as shown by its grading, is comparatively poor and will affect weight and intrinsic value. The condition of spring wheat is reported higher than in August in the northern portion of the belt and slightly lower in Iowa and Nebraska as follows: Wisconsin 93; Minnesota 96; Iowa 93; Nebraska 88; Dakota 63. The local rates of yield in Dakota are extremely variable, ranging from one to 20 bushels per acre.

A St. Louis firm, commenting on the continuance of light wheat receipts at primary markets, says: "After carefully examining the situation we are constrained to believe that, owing to the complete exhaustion of the old crop, both of wheat and flour, the country mills throughout the winter-wheat belt have taken the bulk of the wheat that usually is shipped to the primary markets. We also believe that the farmers have marketed up to the present time as much wheat as they usually do, and that they are not holding back most of their crop for higher prices. Stocks in public elevators are to-day lighter than known for years. The demand is still so urgent that cash wheat is selling at a premium over futures, and as long as this state of affairs exists the duldest mind can comprehend that our stocks can not increase to any extent."



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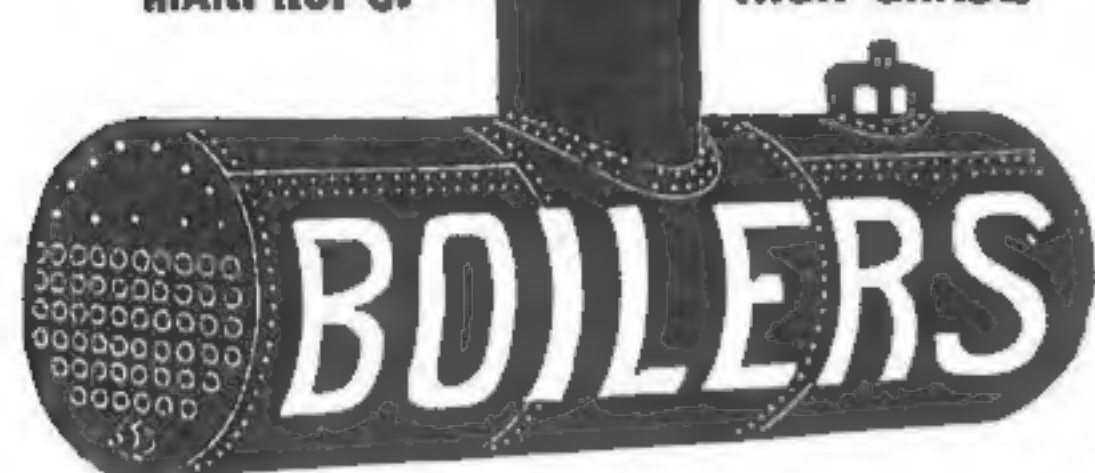
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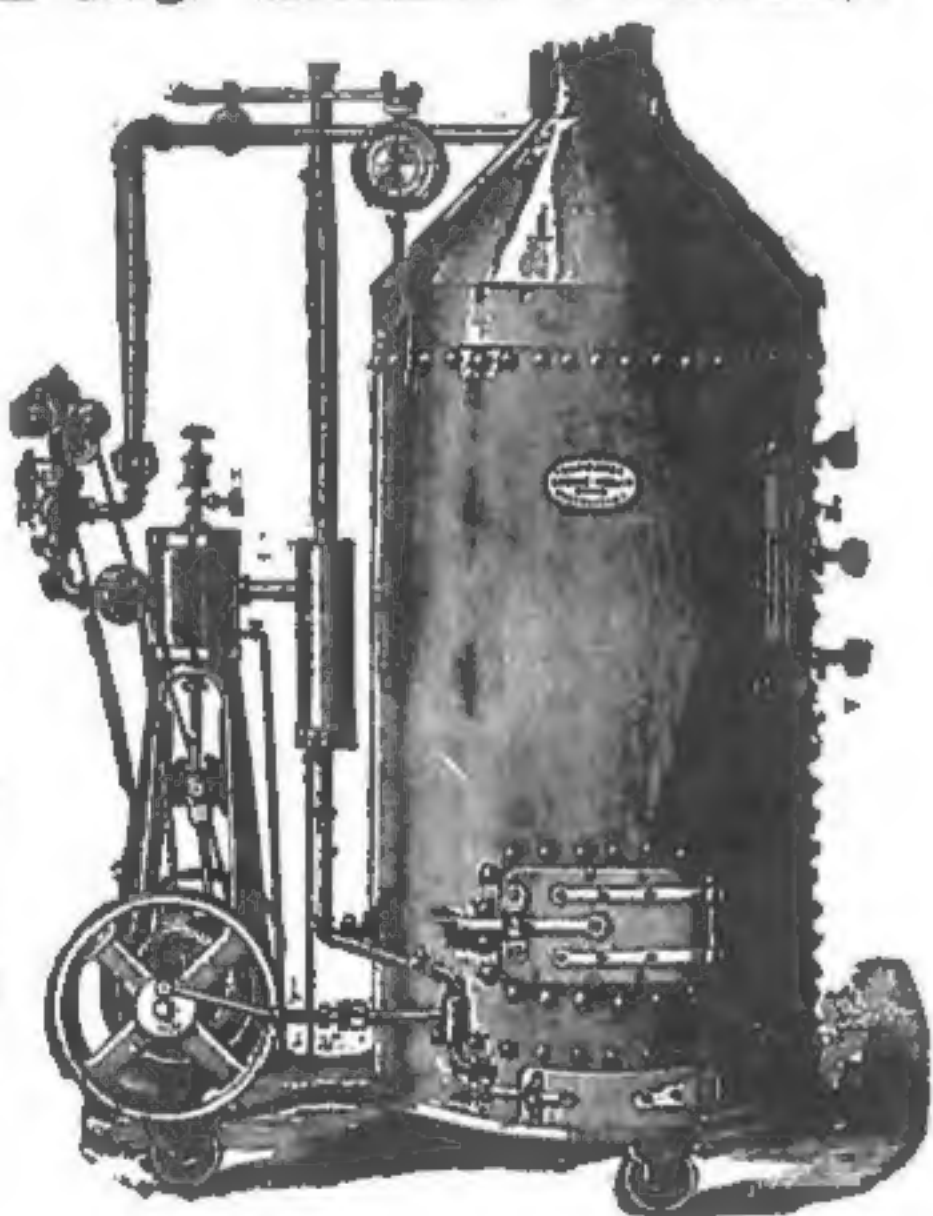
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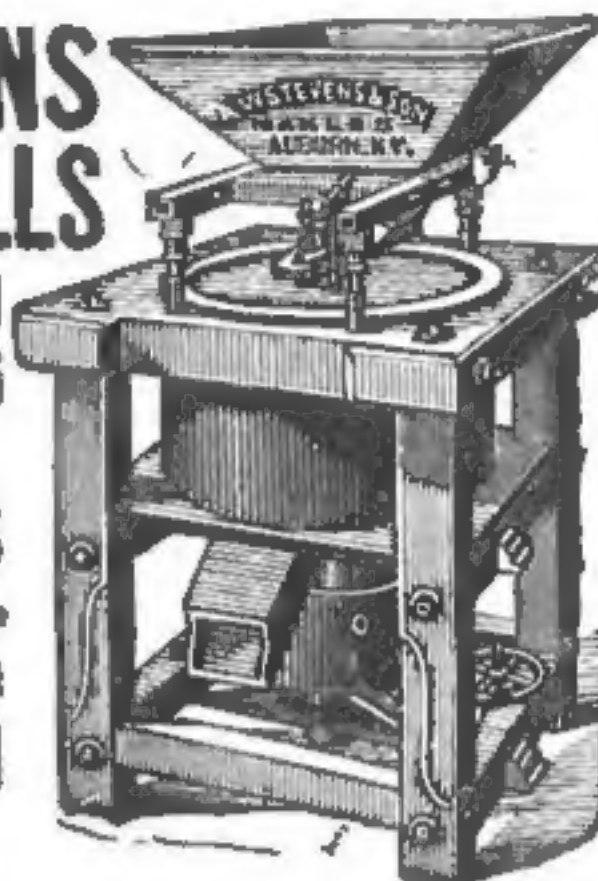
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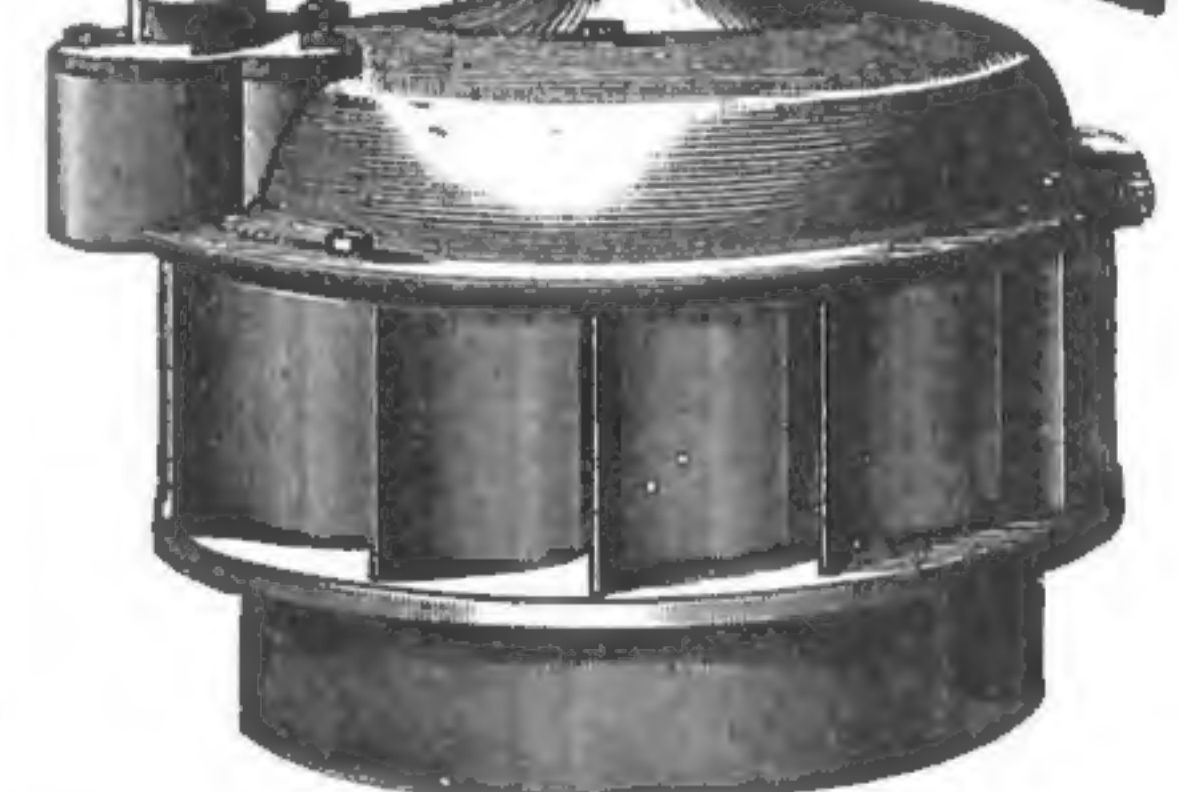
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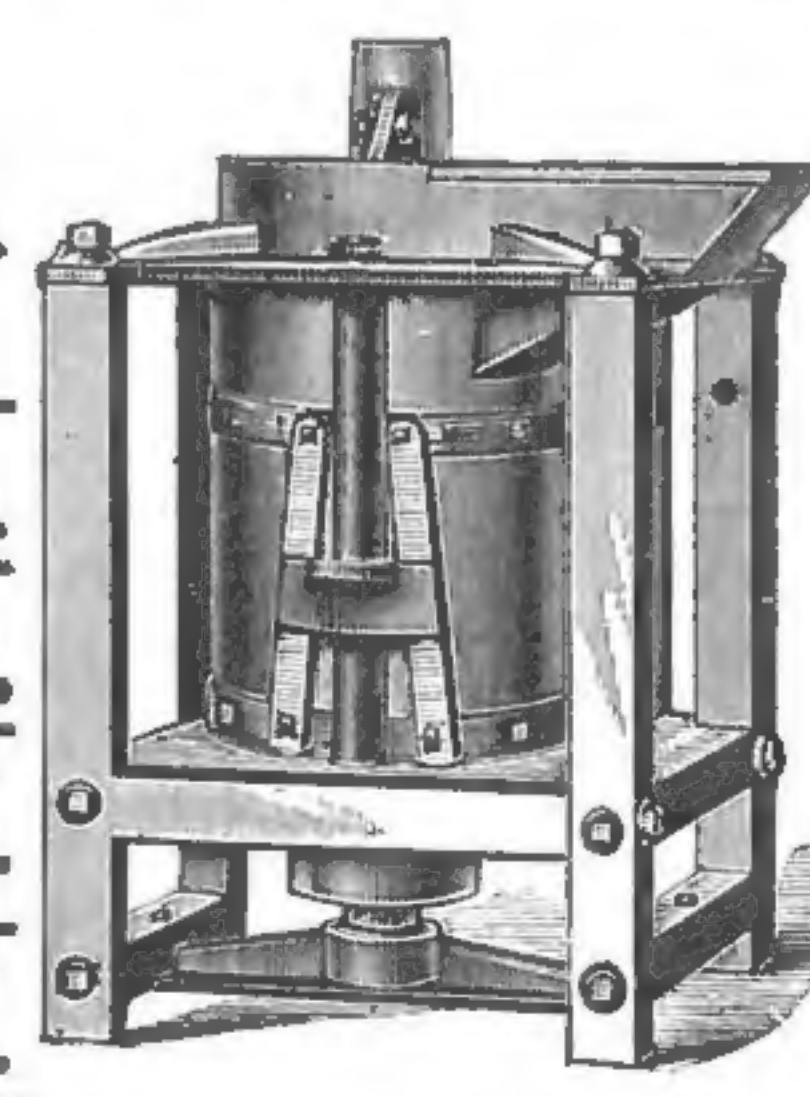
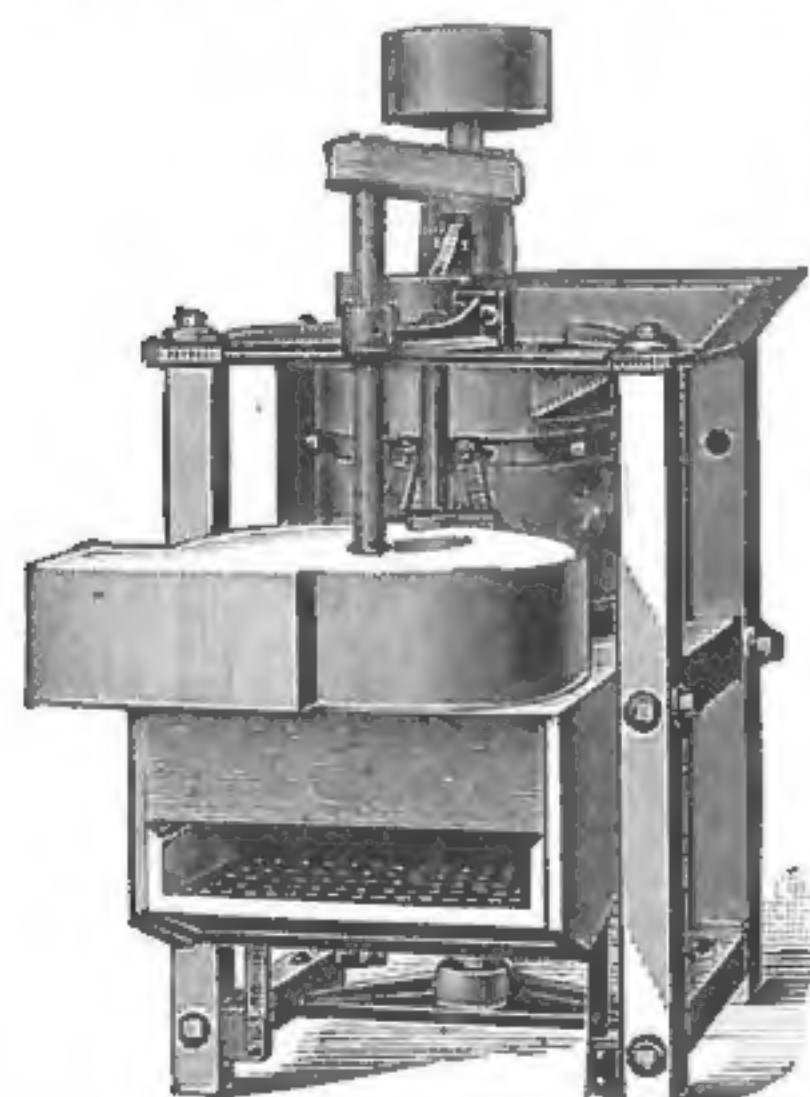
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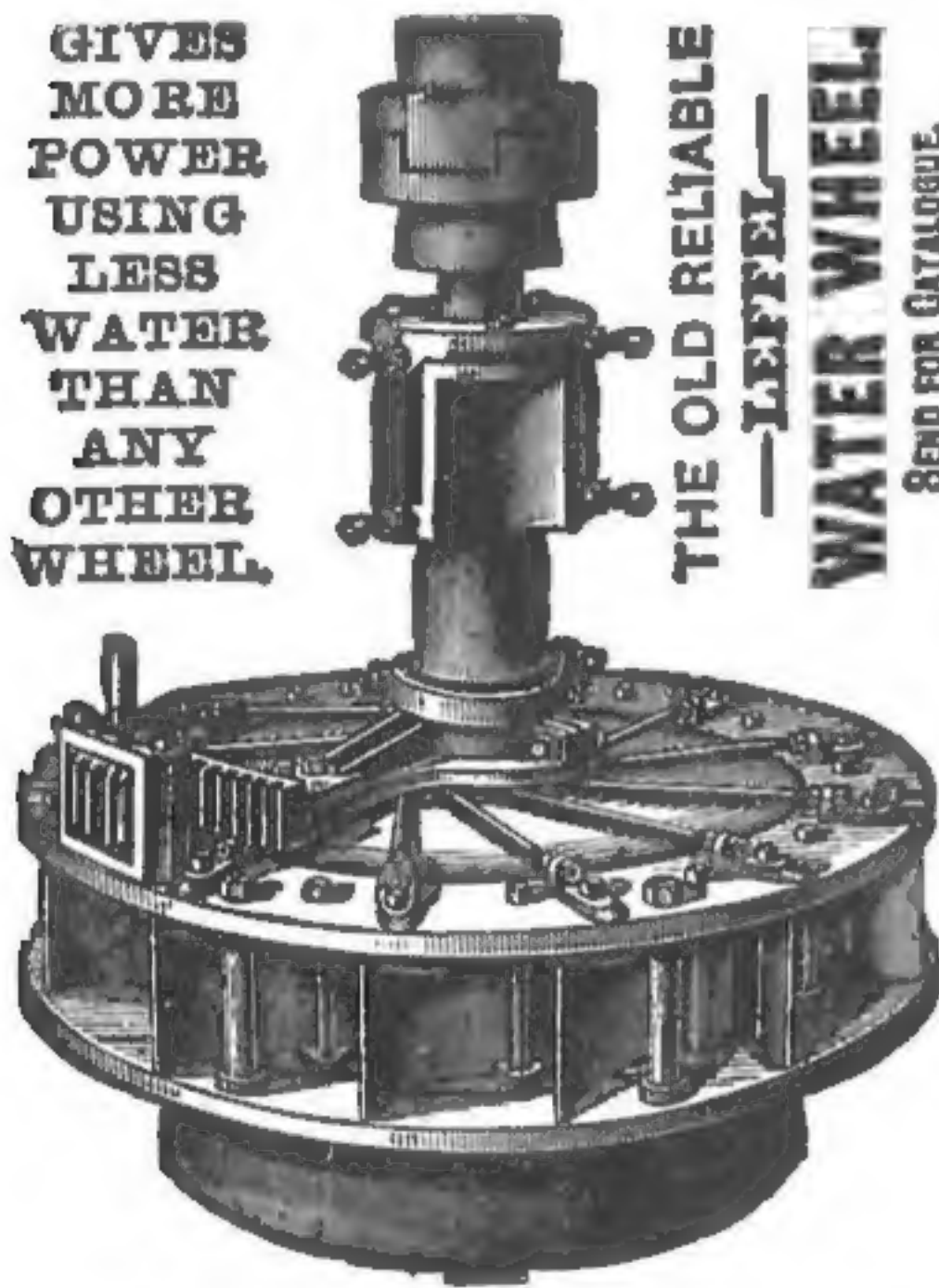
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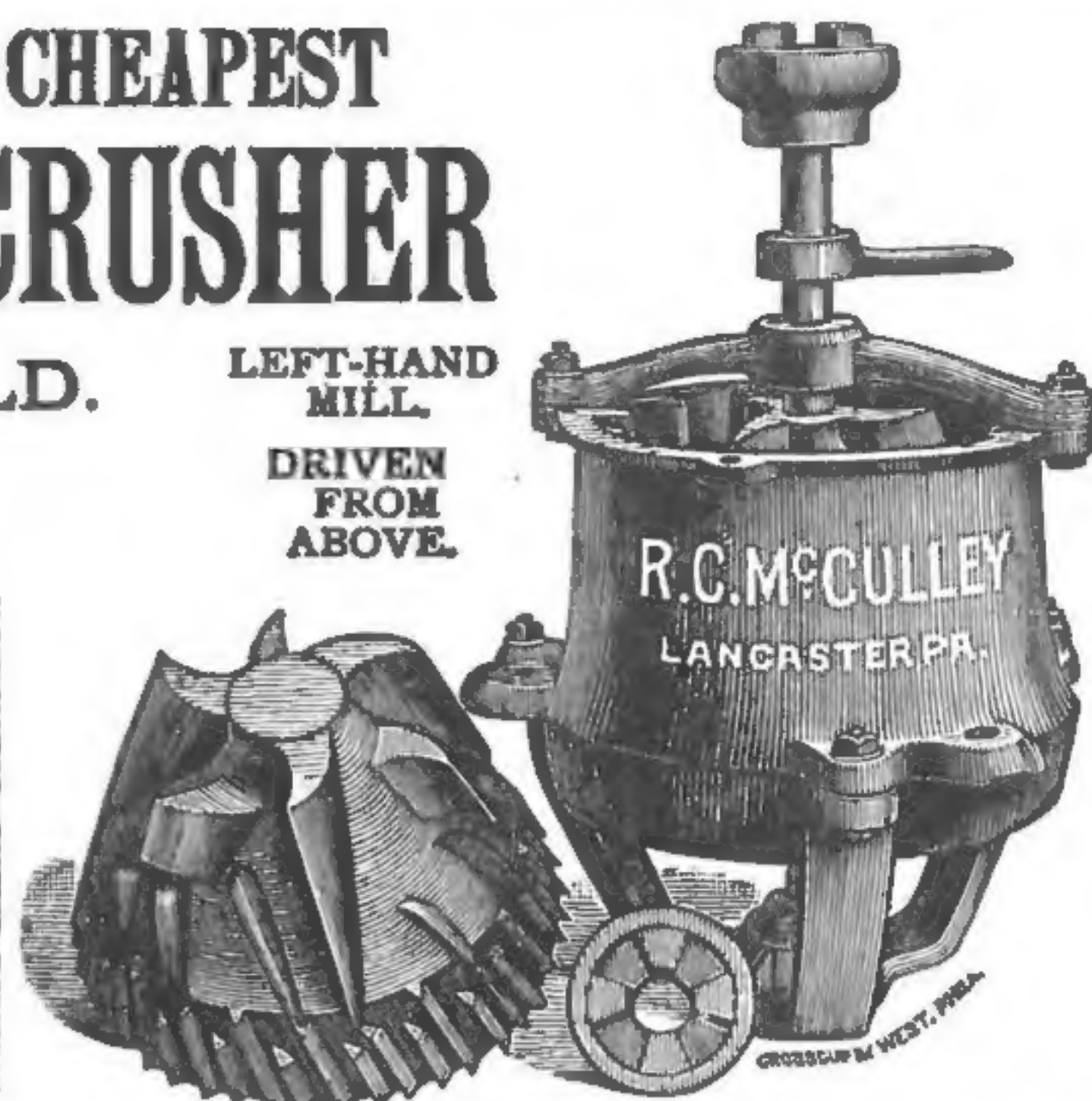
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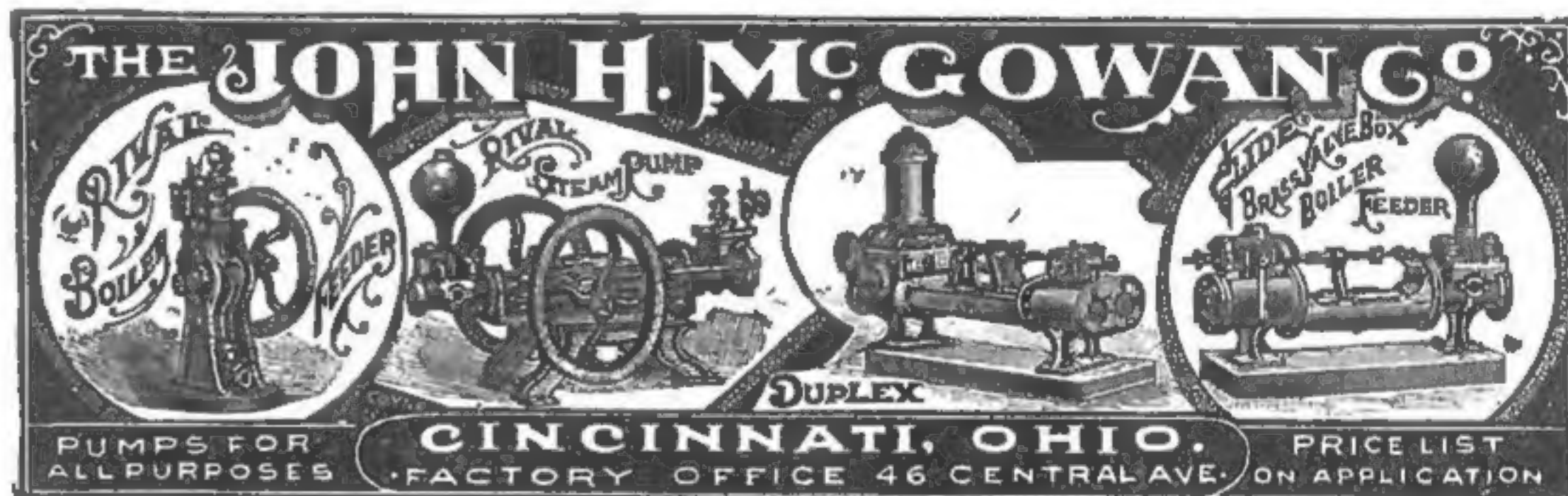
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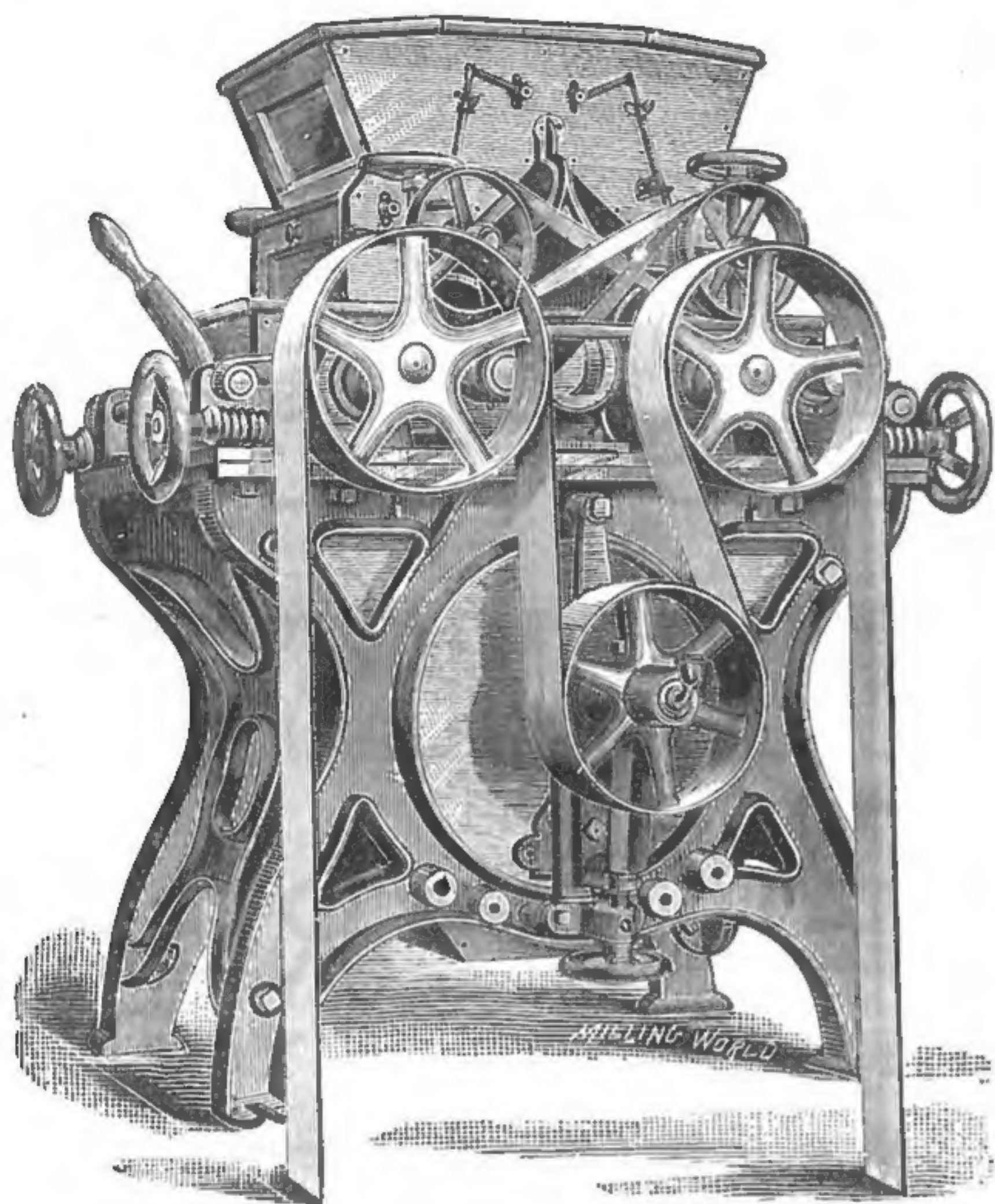
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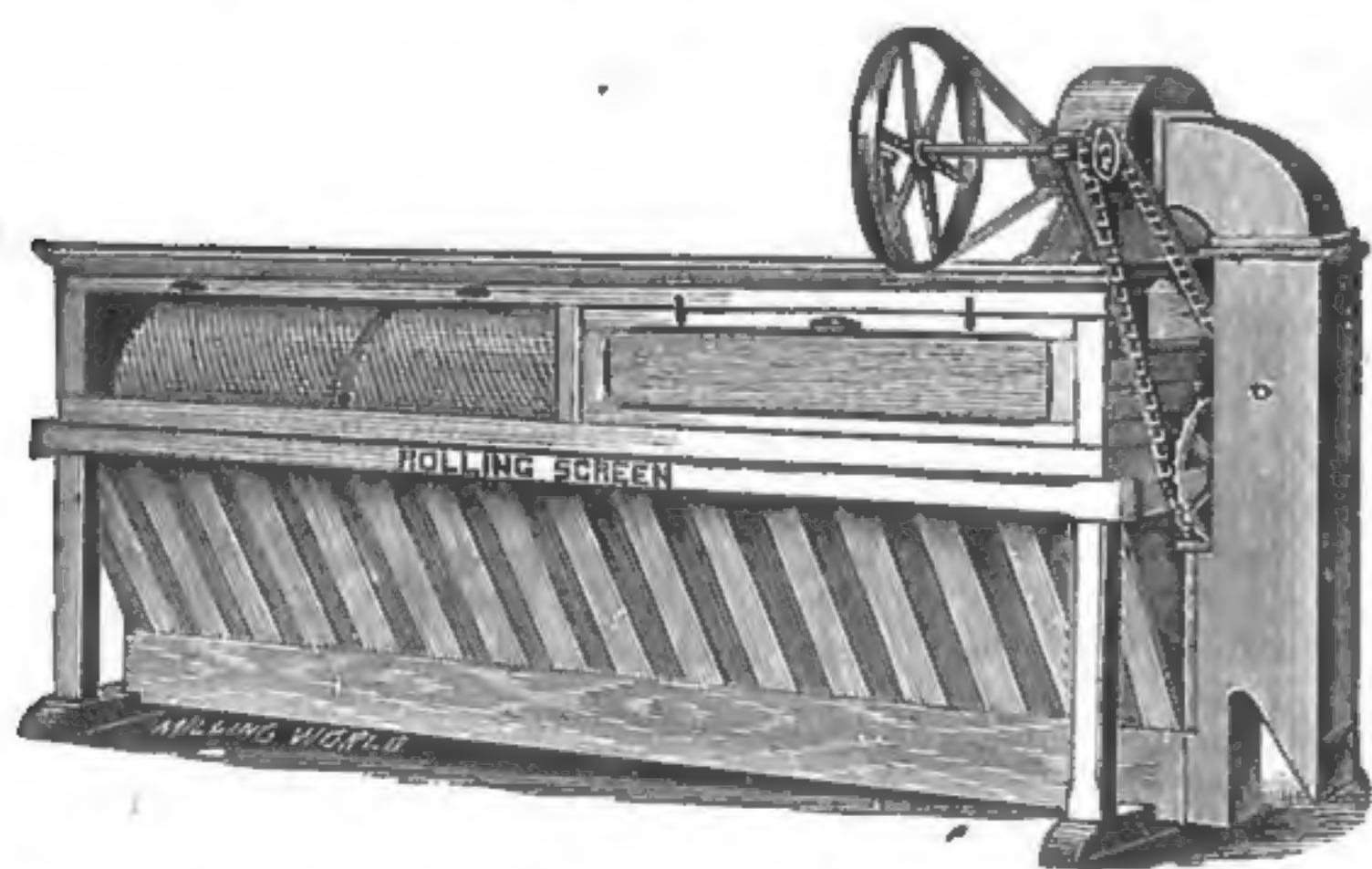
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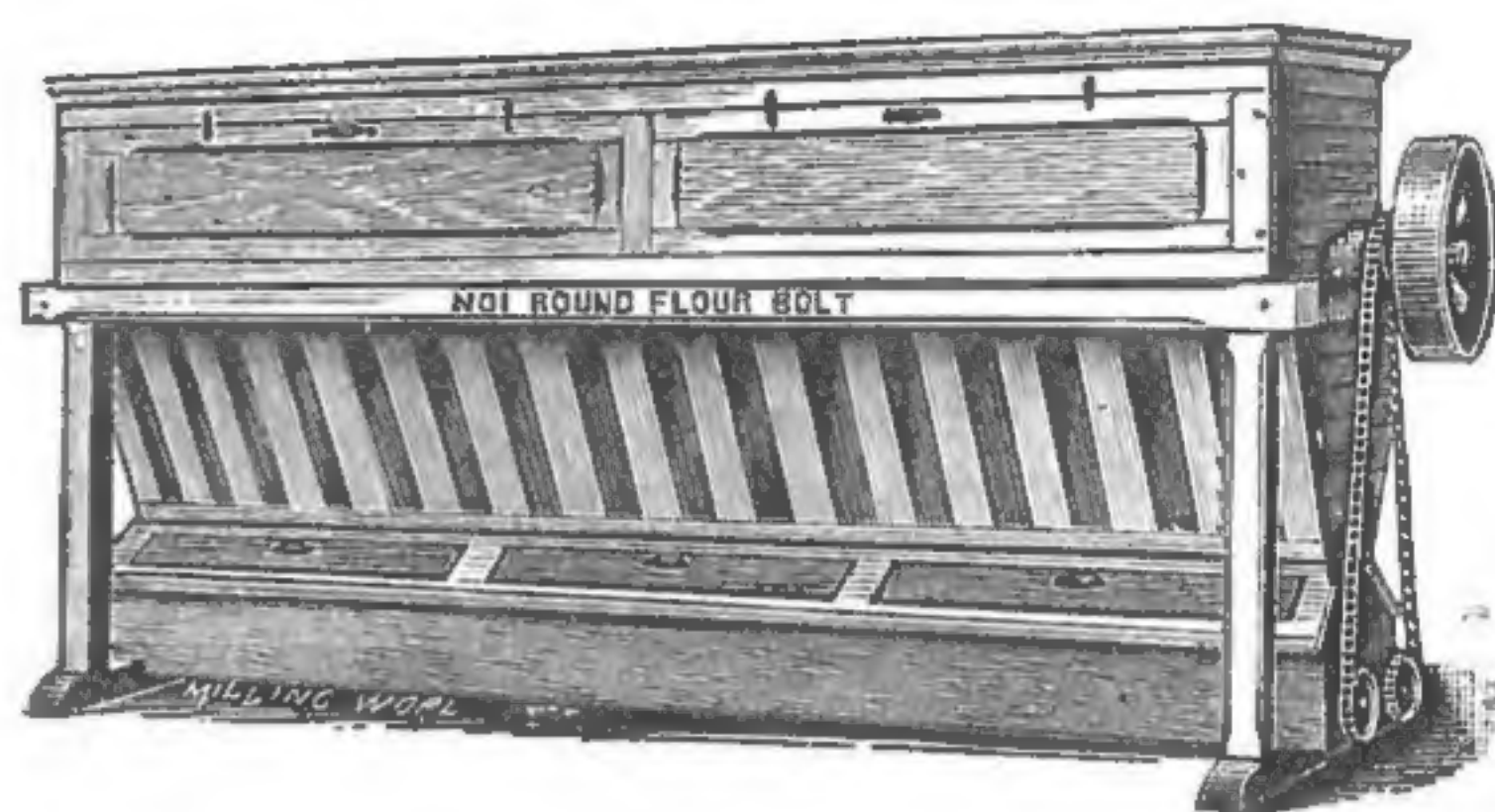
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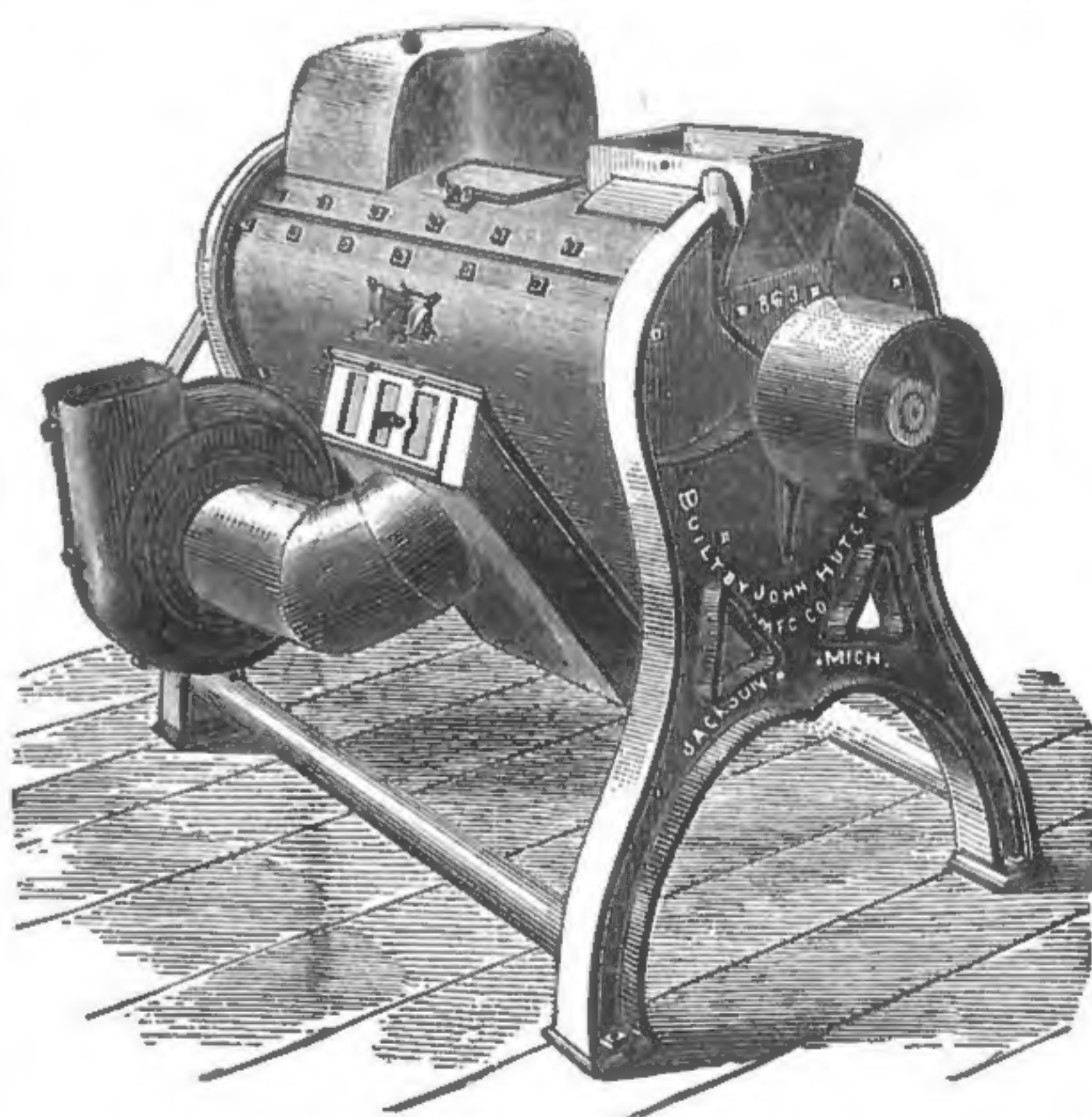


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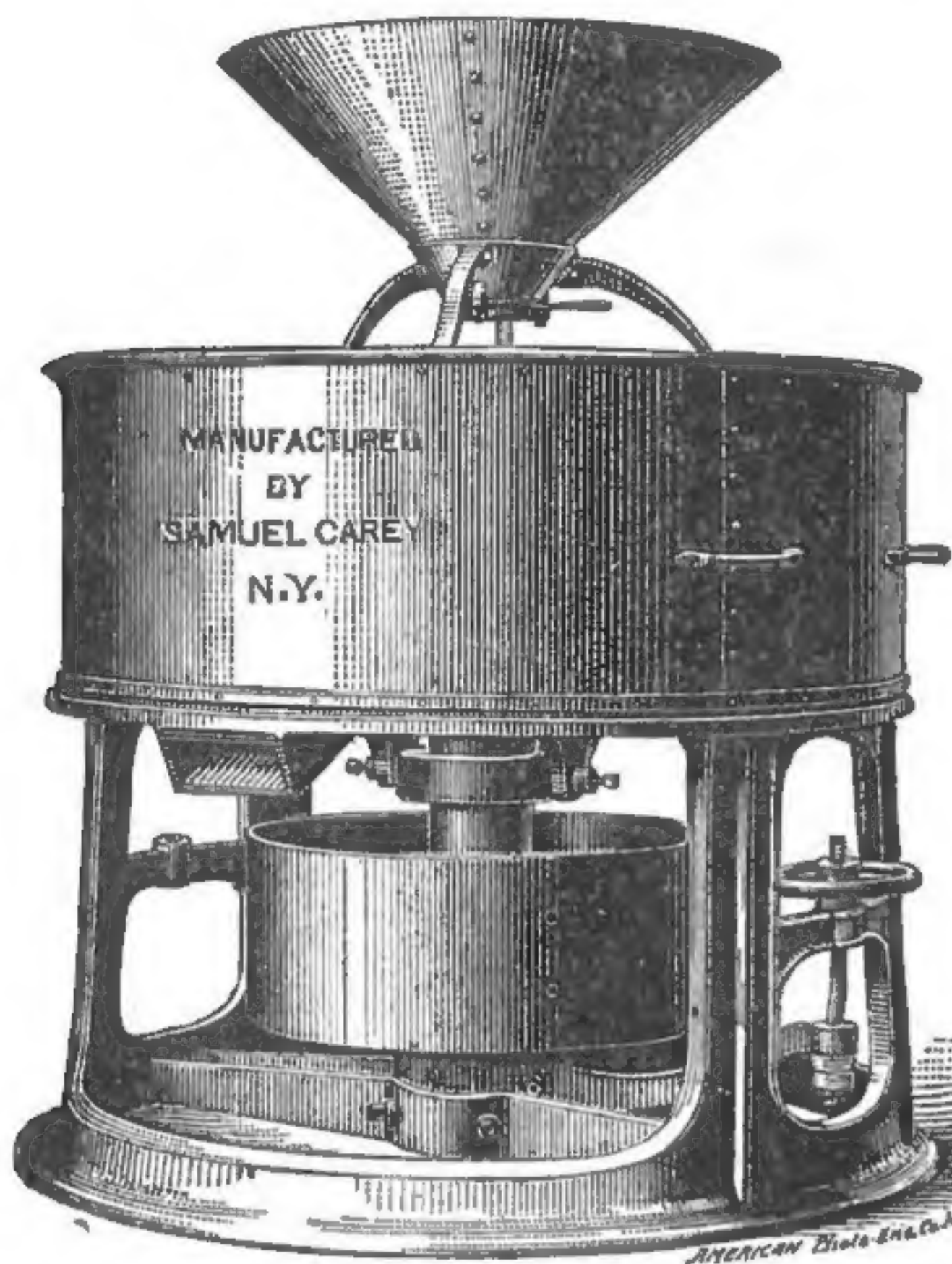
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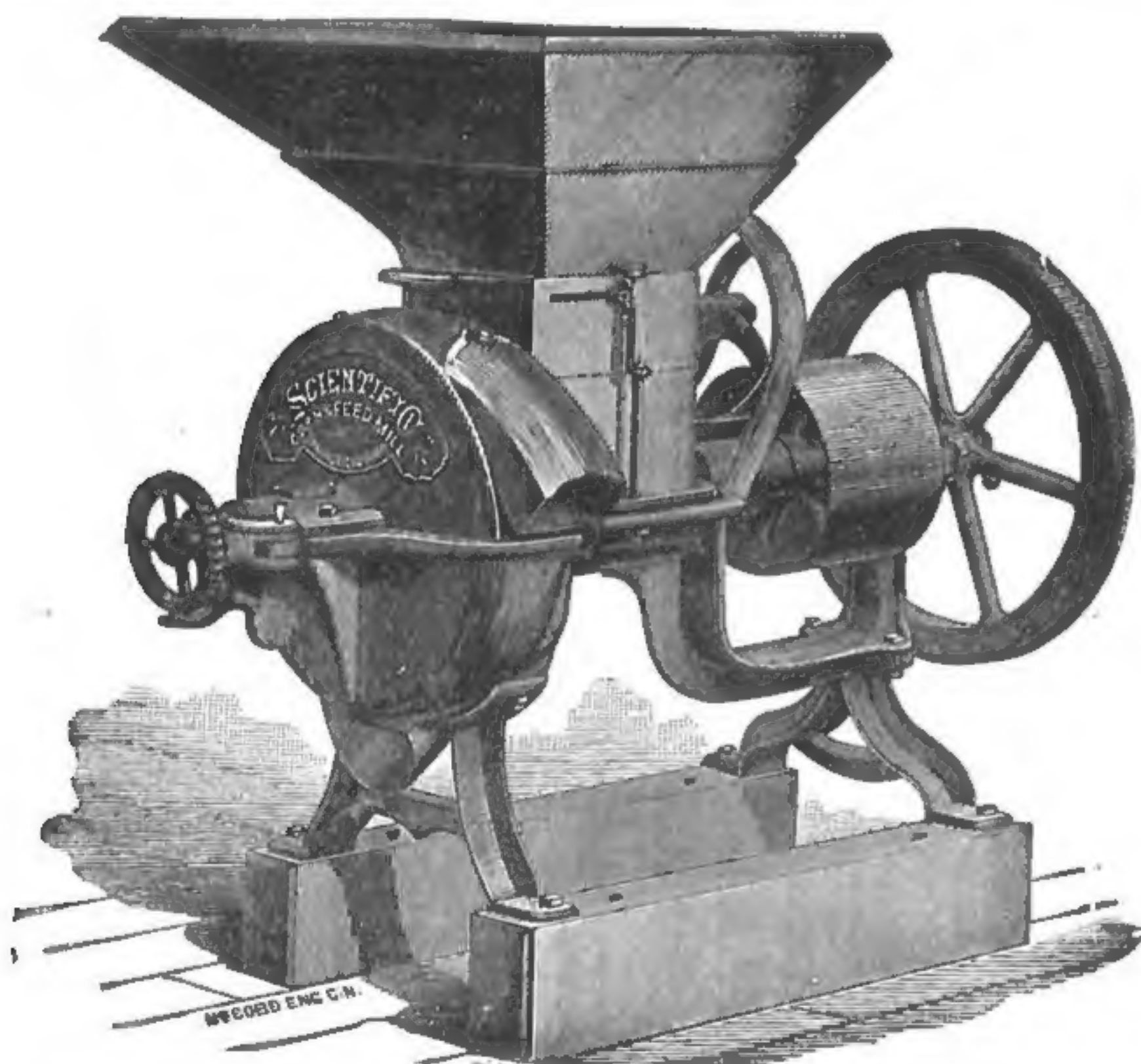
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SPRINGFIELD OHIO.



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Perhaps the HIGHEST COMPLIMENT that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the IMPERFECTIONS OF IMITATIONS, and we therefore take it as a FURTHER COMPLIMENT to the "SALEM" bucket that some of its old patrons who were Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory. Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the ORIGINAL AND RELIABLE SALEM BUCKET. All legitimate Salem buckets are plainly marked with the word

SALEM

W. J. CLARK & CO., SOLE SALEM, OHIO.
Manufacturers

THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.